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3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*

4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*

5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:

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GENERAL INFORMATION:

APPLICANT: Barker, Christopher A.

APPLICANT: Morsey, Mohamad

TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO

TITLE OF INVENTION: VERTEBRATE SUBJECTS

FILE REFERENCE: 9001-0042

CURRENT APPLICATION NUMBER: US/09/252,149B

CURRENT FILING DATE: 1999-02-18

PRIOR APPLICATION NUMBER: 60/075,213

PRIOR FILING DATE: 1998-02-19

NUMBER OF SEQ ID NOS: 39
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APPLICANT: Barker, Christopher
APPLICANT: Morsey, Mohamad
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PRIOR FILING DATE: 1998-02-19
NUMBER OF SEQ ID NOS: 39
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 2
LENGTH: 375
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TITLE OF INVENTION: IMMUNOLOGICAL METHODS
TITLE OF INVENTION: VERTEBRATE SUBJECTS
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CURRENT APPLICATION NUMBER: US/09/252,149B
CURRENT FILING DATE: 1999-02-18
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ORGANISM: bos
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REGISTRATION NUMBER: 31,678
REFERENCE/DOCKET NUMBER: 07265/075001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-678-5070
TELEFAX: 619-678-5099
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
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Patent No. 5827733
GENERAL INFORMATION:
APPLICANT: Huynh, Thanh
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Patent No. 6096506
GENERAL INFORMATION:
APPLICANT: Huynh, Thanh
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ATTORNEY/AGENT INFORMATION:
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: 1
FILING DATE: 08-JUL-
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STATE: US
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DENCE ADDRESS:
SEE: Fish & Richardson P.C.
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08-JUL-1994
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19-SEP-1995
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Pred. No. 4.2e-65;
1; Mismatches 1;
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GENERAL INFORMATION:

APPLICANT: Lee, Se-Jin

APPLICANT: McPherron, Alexandra C.

TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC

TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND NON-HUMAN

TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES

FILE REFERENCE: JHU1120-9

CURRENT APPLICATION NUMBER: US/09/378,238

CURRENT FILING DATE: 1999-08-19

EARLIER APPLICATION NUMBER: 08/795,071

EARLIER APPLICATION NUMBER: 08/525,596

EARLIER APPLICATION NUMBER: 08/525,596

EARLIER APPLICATION NUMBER: PCT/US94/03019

EARLIER FILING DATE: 1994-03-18

EARLIER APPLICATION NUMBER: 08/033,923

EARLIER FILING DATE: 1994-03-18

EARLIER APPLICATION NUMBER: 08/033,923

EARLIER FILING DATE: 1993-03-19

NUMBER: OF SEQ ID NOS: 41

NUMBER: OF SEQ ID NOS: 41
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; FRAGMENT TYPE:
US-09-177-860A-6
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                                                                                                   ; ORGANISM: Mus musculus US-09-378-238-6
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APPLICATION NUMBER: 08/525,596
FILING DATE: 19-SEP-1995
ATTORNEY/AGENT INFORMATION:
NAME: Haile, Ph.D, Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/0
TELECOMMUNICATION INFORMATION:
TELEPHONE: 858-677-1456
TELEPHONE: 858-677-1465
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 126 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 6, Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                    Matches
                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                   SEQ ID NO 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US/09/177,860A
FILING DATE: 23-OCT-1998
CLASSIFICATION: 424
PRIOR APPLICATION: 424
                                                                                                                                    TYPE: PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: 1:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  107;
                                107;
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5. 6465239
                                                                                                                                                    126
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Similarity 98.2%;
07; Conservative
                                  Conservative
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internal
                                               98.1%;
98.2%;
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Pred. No. 4.2e-65;
                             Score 618; DB 4; 1
Pred. No. 4.2e-65;
L; Mismatches 1;
                                                               Length 126;
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                                 Indels
                                0;
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           RESULT 8
US-09-378-238-21
; Sequence 21, Application US/09378238
; Patent No. 6465239
; GENERAL INFORMATION:
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US-09-451-501-6
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                                                                                                                                                                                                                                                                                                                                                                                                   NAME: Lisa A. Haile, Ph.D.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 0726
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 619/678-5099
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                   Query Match
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APPLICANT:
                                                                                                                                                                                                                                                    Local
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FRAGMENT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/795,071

FILING DATE: <Unknown>
APPLICATION NUMBER: PCT/US94/03019

FILING DATE: 18-March-1994

ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows95
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/451,501
FILING DATE: 30-No. 6468535~1999
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Su
CITY: La Jolla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT
                                                                                                                DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 77
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                                                                                                                                                                                                                                       107;
                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STATE: C
                                                                                                                                                                                                                                                                                                                                                          LENGTH: 126 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q,
                                                                                                                                                                                                                                      98.1%;
ilarity 98.2%;
Conservative
                                                                                                                                                                                                                                                                                                                             TYPE: protein TYPE: internal
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              : Se-Jin Lee et al.,
INVENTION: GROWTH DIFFERENTIATION FACTOR-8
SEQUENCES: 27
                                                                                                                                                                                              Se-Jin
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Pred. No. 4.2e-65;
1; Mismatches 1
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                                                                                                                                                                                                                                                                     Length 126;
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FILE OF INVENTION:
FILE REFERENCE: JHU1120-9
CURRENT APPLICATION NUMBER: US/09/378,238
CURRENT FILING DATE: 1999-08-19
EARLIER APPLICATION NUMBER: 08/795,071
EARLIER APPLICATION NUMBER: 08/525,596
EARLIER APPLICATION NUMBER: 08/525,596
EARLIER APPLICATION NUMBER: PCT/US94/03019
EARLIER FILING DATE: 1994-03-18
EARLIER FILING DATE: 1994-03-18
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US-09-378-238-19
                                                                                                               US-09-378-238-19
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                                                         Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
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                                                                       Best
                                                                                     Query Match
                                                                                                                                                                                                                    EARLIER
EARLIER
                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECTIFILE OF INVENTION: TRANSGENIC AQUATIC SPECIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EARLIER
EARLIER
NUMBER O
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TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND NON-HUMAN
TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES
                                                                                                                                                                                     SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: McPherron,
                                                                                                                                 ORGANISM: Gallus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                             LENGTH:
                                                                                                                                                                            ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ID NO
                                                                   Local
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107;
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FILING DATE: 1993-03-19
DF SEQ ID NOS: 41
E: FastSEQ for Windows Version 4.0
                                                    tch 98.1%; al Similarity 98.2%; 107; Conservative
                                                                                                                                                                                                    FILING DATE: 1993-03-19
F SEQ ID NOS: 41
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Similarity 98.2%;
7; Conservative
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                                                                                                                                                                                                                                                              PCT/US94/03019
                                                                   Score 618; DB 4;
Pred. No. 8.3e-65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 618; DB 4; 1
Pred. No. 4.3e-65;
Mismatches 1;
                                                       ed. No. 8.3e
                                                                                  Length 225;
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Sequence 5, ...

Patent No. 5914234

Patent No. 5914234

APPLICANT: LEE, SE-JIN

APPLICANT: MCPHERRON, ALEXANDRA C.

TITLE OF INVENTION: GROWTH DIFFERENT

NUMBER OF SEQUENCES: 9

CORRESPONDENCE ADDRESS:

TYSEE: SPENSLEY HORN JUBAS &
                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY: 1i1
; MOLECULE TYPE:
; FRAGMENT TYPE:
US-08-525-5968-14
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US-08-525-596B-1
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                                                                                                                                 US-08-765-875-5
; Sequence 5, Application US/08765875
; Patent No. 5914234
                                                                                                                                                                      RESULT 11
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: PCT/US94/07762
FILING DATE: 08-JUL-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OPERATING SYSTEM: Windows95
SOFTWARE: FastSEQ for Windows Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 92037
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICA
PRIOR APPLICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF
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                                                                                                                                                                                                              327
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ZIP: 92037
                                                                                                                                                                                                                         VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                            UHQANDRGSAGECCTETKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
                                                                                                                                                                                                                                                                             DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
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                                                                                                                                                                                                                                                                                                                98.1%;
Similarity 98.2%;
)7; Conservative
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amino acid
3Y: linear
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ON NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4225 Executive Square, Suite 1400
Jolla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pplication US/08525596B
7733
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATION: 514
CATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   : Diskette
IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESS:
Fish & Richardson P.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19-SEP-1995
                                                                                                                                                                                                                                                                                                                                                                                  internal
                                                                                                                                                                                                                                                                                                                                                                                             protein
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N: GROWTH DIFFERENTIATION FACTOR-8
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                                                                            ALEXANDRA C.
ROWTH DIFFERENTIATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08/525,596B
                                                                                                                                                                                                                                                                                                                  Score 618; DB 2;
Pred. No. 1.5e-64;
1; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07265/075001
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                                         LUBITZ
                                                                              FACTOR-11
                                                                                                                                                                                                                                                                                                                                            Length 375;
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CURRENT APPI

ICATION DATA:

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; NAME/KEY:
; LOCATION:
US-08-765-875-5
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US-08-795-671-5
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REFERENCE/DOCKET NUMBER: PD36
REFERENCE/DOCKET NUMBER: PD36
REFERENCE/DOCKET NUMBER: PD36
REFERENCE/DOCKET NUMBER: PD36
REFERENCE/DOCKET NUMBER: P-38,347
REFERENCE/DOCKET NUMBER: PD36
RE
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FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/706,958
FILING DATE:
APPLICATION NUMBER: US/08/272,763
FILING DATE: 08-JUL-1994
ATTORNEY/AGENT INFORMATION:
NAME: TUMARKIN PH.D., LISA A.
NAME: TUMARKIN PH.D., LISA A.
P-38,347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                              Sequence 5, Application Patent No. 6008434
GENERAL INFORMATION:
APPLICANT: Se-Jin Le
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CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                                            APPLICANT: Se-Jin Lee and Alexandra McPherron TITLE OF INVENTION: GROWTH DIFFERENTIATION FACUUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ZIP: 92037
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
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CITY:
STATE:
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                                                                                                                                                      CITY: La Jolla
STATE: California
COUNTRY: US
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STRANDEDNESS: si
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ADDRESSEE: Fish & Richardson
STREET: 4225 Executive Square
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CALIFORNIA
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PE: Floppy disk

IBM PC compatible

CVSTEM: PC-DOS/MS-DOS

CVSTEM: PC-DOS/MS-DOS
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1; Mismatches
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       Version
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FEATURE:
NAME/KEY:
LOCATION:
US-08-795-671-5
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US-09-177-860A-14
; Sequence 14, Ap
; Patent No. 6096
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NAME: HAILE, PH.D., LISA A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 0726
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 619/678-5099
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
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                                                                                                                    OPERATING SYSTEM: Windows95
SOFTWARE: FastSEQ for Windows Versio:
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/177,860A
FILING DATE: 23-OCT-1998
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/525,596
FILING DATE: 19-SEP-1995
ATTORNEY/AGENT INFORMATION:
NAME: Haile, Ph.D, Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/0
TELECOMMUNICATION INFORMATION:
TELEPHONE: 858-677-1456
TELEFAX: 858-677-1465
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COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows
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STATE: CA
COUNTRY: US
ZIP: 92121
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milarity 98.2%;
Conservative
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4365 Executive Drive, Suite 1600
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APPLICANT: Barker, Christopher A.

APPLICANT: Morsey, Mohamad

TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO

TITLE OF INVENTION: VERTEBRATE SUBJECTS

FILE REFERENCE: 9001-0042

CURRENT APPLICATION NUMBER: US/09/252,149B

CURRENT FILING DATE: 1999-02-18

PRIOR APPLICATION NUMBER: 60/075,213

PRIOR FILING DATE: 1998-02-19

NUMBER OF SEQ ID NOS: 39

SOFTWARE: Patentin Ver. 2.0

SEQ ID NO 29

LENGTH: 375
                                                                                                                                         RESULT 15
US-09-252-149B-32
; Sequence 32, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
; APPLICANT: Barker, Christopher A.
; APPLICANT: Morsey, Mohamad
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US-09-252-149B-29
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APPLICANT: Morsey, Mohamad
TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO
TITLE OF INVENTION: VERTEBRATE SUBJECTS
FILE REFERENCE: 9001-0042
CURRENT APPLICATION NUMBER: US/09/252,149B
CURREN! FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: 60/075,213
PRIOR FILING DATE: 1998-02-19
NUMBER OF SEQ ID NOS: 39
SOFTWARE: Fatentin Ver. 2.0
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Best Local S
Matches 107
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ORGANISM: Homo
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al Similarity 98.2%;
107; Conservative
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Pred. No. 1.5e-64;
L; Mismatches 1
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Pred. No. 1.5e-64;
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; SEQ ID NO 32
; LENGTH: 375
; TYPE: PRT
; ORGANISM: Sus
US-09-252-149B-32
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Matches
                                                                                    Query Match
Best Local S
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                                       267
                     61
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                                      VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 109
                                                                          cch 98.1%; l Similarity 98.2%; 107; Conservative 1
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32
                                                                            Score 618; DB 4;
Pred. No. 1.5e-64;
1; Mismatches 1.
                                                                                              Length 375;
                                                                             Indels
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Search completed: January 31, 2003, 18:18:23
Job time : 11.5 secs

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Title:
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Sequence:
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Maximum
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     10987654821
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Compugen Ltd
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AC AAB2
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DT 30-A
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DE Catt
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KW Grow
KW Vacc
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ALIGNMENTS

ndard; Protein; 109 AA.

growt

(first entry)

h differentiation factor 8 C-terminal region.

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regulating growth differentiation factor 8 (GDF-8) activity in the	Increasing the muscle mass of animals used in meat production by down		WPI; 2001-112680/12.		Halkier T, Mouritsen S, Klysner S;		(MEBI-) M & E BIOTECH AS.		26-JUL-1999; 99US-0145275.	20-JUL-1999; 99DK-0001014.		20-JUL-2000; 2000WO-DK00413.		25-JAN-2001.		WO200105820-A2.		Synthetic.	Bos taurus.			Growth differentiation factor 8; GDF-8; myostatin; down-regulation;	

animal

through induction of anti-GDF-8 antibody production

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RESULT 2
AAW69887
ID AAW6
XX
AC AAW6
AC AAW6
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Matches 109
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Growth differentiation factor-8; GDF-8; huntransforming growth factor-beta; muscle; menuromuscular disease; muscular dystrophy;
                                                                                           05-FEB-1998;
                                                                                                                                                                                                                                                                                                 Cleavage-site
Protein
       23-MAY-1997;
05-FEB-1927;
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Similarity 100.0%;
19; Conservative C
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263..266
267..375
/label= Mat_protein
   97US-0862445
97US-0795071
                                                                                         98WO-US02479.
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Pred. No. 1.8e-59;
Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GDF-8; human; transgenic animal; muscle; meat; inhibitor; obesity; lystrophy; cachexia; AIDS; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 109;
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AAY33934
ID AAY
invention provides novel mammalian and avian GDP-8 proteins (see CC GDP-8 expression is disrupted or interfered with. Also claimed CC are: (1) Chicken or turkey eggs or meat, beef, milk, pork and lamb CC inhibiting the action of GDP-8 inhibitor; (4) method for increasing muscle mass in CC aridenceding a GDP-8 protein some CC acid encoding a GDP-8 protein truncated by loss of the C-terminal CC and for poultry reduced cholesterol canimals have increased muscle mass in CC and for poultry reduced cholesterol contents. Method (3) is used to treat muscle wasting or neuromuscular diseases, muscular atrophy CC and aging, particularly muscular dystrophy, spinal cord or traumatic injuries, congestive or obstructive lung disease, AIDS CC and cachexia. Method (4) is used to treat cancer of muscle, connective tissue and bone, or obesity. Also (not claimed) GDP-8 CC anson be used to maintain myoblasts intended for transplanting or to improve efficiency of fusion. Ab can be used to detect and calso for immunotherapy and in vivo imaging.
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                                                                                                                                                                                                                                                                                                                                           В
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                                                                                                                                                                                                                            RESULT
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                         Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick; turkey; zebrafish; immune response; vaccine; body weight; muscle mass; mammary gland tissue; lactation; feed uptake; muscle degeneration; GDF11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This is the amino acid sequence of bovine growth differentiation factor-8 (GDF-8), a novel member of the transforming growth factor beta superfamily that appears to relate to various cell proliferative disorders, especially those involving muscle, nerve and adipose tissue. The sequence was deduced from a cDNA clone (see AAV45818) isolated from a skeletal muscle cDNA library. The
                                                                                            Amino acid s
                                                                                                                              09-NOV-1999
                                                                                                                                                            AAY33934;
                                                                                                                                                                                             AAY33934
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N-PSDB; AAV45818.
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                                                                                                                                                                                          standard; peptide; 375 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             animals with gene for growth differentiation factor-8 have increased muscle and reduced cholesterol contents, GDF-8 inhibitors for treating cancer, obesity, ar disease
                                                                                                                                                                                                                                                                                               GSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS
                                                                                            equence of bovine myostatin.
                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                       larity
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                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                      Score 630; DB 19;
Pred. No. 6.7e-59;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                         109
                                                                                                                                                                                                                                                                                                                                                                                                                                     375;
                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
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0

Bos sp

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RESULT 4
AAY33917
ID AAY3
XX AAY3
AC AAY3
XX AOY-A
DT 09-A
XX O9-A
XX Myos
KW Lurk
KW GDF1
XX Mamm
KW GDF1
XX Bos
XX Bos
XX FT Clea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     გ
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                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention provides myostatin peptides consisting of 3-100 amino cids, derived from a region of mouse, rabbit, human, baboon, bovine, concine, ovine, chick, turkey or zebrafish myostatin (see sequences C porcine, ovine, chick, turkey or zebrafish myostatin (see sequences C AAY33930-939). The myostatin peptides are derived preferably from a concept sequences. The peptides and the nucleic acids encoding the peptides C are useful as vaccines for eliciting an immune response in a vertebrate muscle mass, number and size of muscle cells, muscle strength, mammary C gland tissue, lactation, appetite or feed uptake, life span of the vaccines are also useful for treating a disorder consting conditions. The vaccines are also useful for treating a disorder useful for modulating GDFII activity. The present sequence represents a bovine myostatin sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Barker CA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             W09942573-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26-AUG-1999.
                                                                                                         Myostatin; mouse; rabh
turkey; zebrafish; imm
mammary gland tissue;
GDF11 activity.
               Region
                                        Cleavage-site
                                                                                                                                                                                                            09-NOV-1999
                                                                                                                                                                                                                                                                 AAY33917 standard;
                                                                                                                                                                                                                                                                                                                                     327
                                                                                                                                                                                                                                                                                                                                                                                        267
                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 w myostatin peptide, multimers and immunoconjugates for eliciting immune response in a vertebrate against a myostatin immunogen
                                                                                ďв
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1999-527471/44.
                                                                                                                                                                                                                                                                                                                                                                                        DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
                                                                                                                                                                                                                                                                                                                                    VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                 109;
                                                                                                                                                                              myostatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BIOSTAR INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fig 1A-D; 109pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Morsey M;
                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%;
larity 100.0%;
Conservative 0
                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0075213.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99WO-CA00128.
            /note= "proteolytic 264..375
                                     Location/Qualifiers
263..266
                                                                                                                                                                               sequence
                                                                                                                      rabbit; human; baboon; bovine; porcine; ovine; chick; immune response; vaccine; body weight; muscle mass; sue; lactation; feed uptake; muscle degeneration;
                                                                                                                                                                                                                                                                 Protein;
  "myostatin active
                                                                                                                                                                                                                                                                 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                0
•
                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 630; DB 20; Pred. No. 6.7e-59; Mismatches 0;
                          cleavage site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                         326
                                                                                                                                                                                                                                                                                                                                                                                                                     60
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0
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RESULT 5
AAY31191
ID AAY3
XX
AC AAY3
AC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention provides myostatin peptides consisting of 3-100 amino acids, derived from a region of mouse, rabbit, human, baboon, bovine, chick, turkey or zebrafish myostatin (see sequences C porcine, ovine, chick, turkey or zebrafish myostatin (see sequences C AAY33930-939). The myostatin peptides are derived preferably from a cregion of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the care useful as vaccines for eliciting an immune response in a vertebrate capainst a myostatin immunogen. They result in increasing body weight, conscle mass, number and size of muscle cells, muscle strength, mammary constitute, and cause a reduction in body fat content, useful for muscle wasting conditions. The vaccines are also useful for treating a disorder cuseful for modulating GDF11 activity. The present sequence represents the amino acid sequence of bovine myostatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 109
                                                                                                          veterinary; medicine; treatment; muscle tissue disease; wasting disease; neuromuscular disorder; muscular atrophy; spinal cord injury; aging; fat; traumatic injury; acquired immune deficiency syndrome; cachexia; bovine; congenital obstructive pulmonary disease; transgenic animal; transgene; food animal; cholesterol; muscle mass; diagnostic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Barker CA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-AUG-1999,
                                                                                   808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAY31191 star
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB; AAX99349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (BIOS-) BIOST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19-PEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9942573-A1
                                                                                                                                                                                                                                                                                                                               Bovine GDF-8
                                                                                                                                                                                                                                                                                                                                                                                   29-OCT-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY31191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               myostatin peptide, n
                                                                                   taurus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1999-52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       al Simil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      375 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fig 16B; 109pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Morsey M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%; Score 630; DB 20; larity 100.0%; Pred. No. 6.7e-59; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ndard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7471/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAR INC.
                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9805-0075213.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-CA00128.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 multimers and immunoconjugates :
a vertebrate against a myostatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 375 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for eliciting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    immunogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  375;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
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W09906559-A1

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RESULT 6
AAB20135
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This invention describes novel recombinant cell lines that express growth-differentiation factor-8 (GDF-8) receptor polypeptide or GDF-11 receptor polypeptide. The GDF receptors are used to identify specific (ant) agonists, potentially useful therapeutically in human or veterinary medicine. Antibodies derived from the products of the invention are used to treat muscle tissue diseases (particularly wasting diseases, cord and conducts injury, congenital obstructive pulmonary diseases, acquired immune deficiency syndrome and cachexia). Transgenic, non-human animals that express the products of the invention from a transgene present in germ and somatic cells, specifically where GDF-8 receptor is expressed, increased muscle mass. Peptides derived from the products of the invention and GDF-receptor binding and blocking agents, are reagents and changnostic agents for studying muscle wasting diseases and for development of therapeutic agents. This sequence represents the bovine GDF-8 protein which is used in the method of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 109
20-JUL-20Q0;
                                                          WO200105820-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Recombinant cells that express growth-differentiation factor receptors - and related antibodies, nucleic acids, vector, transformed cells, peptide fragments and transgenic animals, treatment and diagnosis of muscle tissue diseases
                             25-JAN-2001
                                                                                        Bos taurus
                                                                                                                    vaccine;
                                                                                                                                                                                          30-APR-2001
                                                                                                                                                                                                                      AAB20135;
                                                                                                                                                                                                                                                  AAB20135 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI;
                                                                                                                                                              Cattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11-FEB-1999
                                                                                                                                                                                                                                                                                                                            327
                                                                                                                                                                                                                                                                                                                                                                                  267
                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                              DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
                                                                                                                                                                                                                                                                                                                       1999-153789/13.
)B; AAZ09367.
                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%; Score 630; DB 20; Il Similarity 100.0%; Pred. No. 6.7e-59; 109; Conservative 0; Mismatches 0;
                                                                                                                                differentiation
                                                                                                                                                            growth differentiation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UNIV JOHNS HOPKINS SCHOOL MEDICINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             McPherron A;
                                                                                                                    muscle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               F19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  375 AA;
                                                                                                                                                                                         (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97US-0054461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98WO-US15598
                                                                                                                    meat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           89pp;
                                                                                                                 factor 8;
cachexia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               English.
                                                                                                                                                                                                                                                   375
                                                                                                                                                            factor
                                                                                                               GDF-8; myostatin; down-regulation; cardiant; cattle.
                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 375;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for
                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                  326
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2000WO-DK00413

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present sequence is that of cattle growth differentiation factor (C 8 (GDF-8), also called myostatin. It is an object of the invention (C to produce a recombinant therapeutic vaccine capable of effecting (C down-regulation of GDF-8 in order to increase the muscle growth (C rate of farm animals. Variants of GDF-8 (see AAB20145-53) are (C provided that are capable of breaking autotolerance against (C autologous GDF-8. These comprise a C-terminal portion of human (C GDF-8 in which a portion of the native sequence is replaced by a T-cell epitope such as the promiscuous tetanus toxin T-cell epitope (C F2 or P30. Nucleic acids encoding the GDF-8 variants can be used for genetic immunisation of the animals. Down-regulation of GDF-8 activity is used to increase muscle mass by up to at least 45% (C in cattle, pigs and poultry used for meat production, reducing the to treat human diseases such as cancer cachexia where muscle atrophy is pronounced and for patients suffering from acute and chronic contents for patients suffering from acute and chronic contents.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                 anorexia;
cardiant;
                                                                                                                             Bovine; promyostatin; myostatin; therapy; amyotrophic lateral sclerosis; neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes; muscle growth; myostatin prodomain; signal transduction; atherosclerosis obesity; cachexia; hypertension; myocardial infarction; neuroprotective; muscular dystrophy; muscle wasting disorder; neuromuscular disorder; anorexia; growth differentiation factor; anorectic; immunomodulator;
                                                                                    Bos
                                                                                                                                                                                                                                             Bovine promy
                                                                                                                                                                                                                                                                                                             AAE18664;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Increasing the muscle mass of animals used in meat production by down regulating growth differentiation factor 8 (GDF-8) activity in the animal through induction of anti-GDF-8 antibody production -
                                   Domain
                                                                                                                                                                                                                                                                               17-MAY-2002
                                                                                                                                                                                                                                                                                                                                              AAE18664 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       is pronounced and for heart failure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 1; Page 82-83; 110pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Increasing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2001-112680/12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Halkier
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20-JUL-1999;
26-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (MEBI-)
                                                                                                                                                                                                                                                                                                                                                                                                                             327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            267
                                                                                                                                                                                                                                                                                                                                                                             7
                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
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                                                                                ďs
                                                                                                                                                                                                                                                                                                                                                                                                                         DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         al Simi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3
2
                                                                                                                  gr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       W
                                                                                                                                                                                                                                              ostatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         larity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      75 AA;
                                                                                                                   tabolic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mouritsen S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BIOTECH AS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99DK-0001014.
99US-0145275.
    claimed
                                               Location/Qualifiers
                   note=
                                                                                                                                                                                                                                                                                                                                               Protein; 375 AA.
    "Myostatin
l in claim :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Klysner S;
  statin prodomain; This region is claim 12 of the specification"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 630; DB 22;
Pred. No. 6.7e-59;
); Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 375;
                                                                                                                                                                              atherosclerosis;
                specifically
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
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RESULT 8
AAU75625
ID AAU'
XX
AC AAU'
XX
DT 21-N
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                                                                                                                                                                                                                                                                                                                                                                               The present invention relates to a purified promyostatin polypeptide contion. A myostatin peptide is useful as a target for treatment of neurodegenerative diseases such as amyotrophic lateral sclerosis or muscular dystrophy. A myostatin prodomain inhibits myostatin signal transduction, while mature myostatin peptide referred as myostatin is useful for inducing myostatin signal transduction by interacting growth. Modulating myostatin signal transduction is useful for regulation cell. Modulating myostatin signal transduction is a negative regulator or muscle growth. Modulating myostatin signal transduction in a muscle cell or adipose tissue is useful for treating pathological conditions associated with myostatin such as obesity and type II diabetes, cachexia, conditions associated with obesity, e.g. atherosclerosis, hypertension, myocardial infarction, muscle wasting disorders such as muscular dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is useful for modulating the growth of muscle or adipose tissue in an organism. Myostatin prodomain is useful for increasing muscle mass or creducing fat content of an organism which is useful as a food source, and morganism e.g. an organism to an environment. Mutant promyostatin or growth differentiation factor (GDF)-11 is useful for reducing or inhibiting myostatin signal transduction. The present or sequence is bovine promyostatin.
                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 200
N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel substantially purified promyostatin polypeptide portion (myostatin prodomain or mature myostatin peptide), useful as myostatin signal transduction modulator in muscle cell or adipose tissue, for treating obesity -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07-FEB-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-JUL-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200209641-A2.
                                                                                                                                                                                                                                                                                                                                                      Sequence
   21-MAY-2002
                                  AAU75625;
                                                                 AAU75625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
                                                                                                                                                      327
                                                                                                                                                                                                                    267
                                                                                                                                                                                                                                                                                  Match 100.0%;
Local Similarity 100.0%;
nes 109; Conservative (
                                                                                                                                                                                                                                                    μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2002-179989/23.
                                                                                                                                                VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                 DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5; Page 157-158; 175pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mcpherron AC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAD29747
                                                                 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                        375 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001WO-US23510
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 (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         267..374
/note= "Mature myostatin; This region is specifically claimed in claim 17 of the specification"
                                                                 375
                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   English
                                                                                                                                                                                                                                                                                  Score 630; DB 23; Pred. No. 6.7e-59; Mismatches 0;
                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                    375;
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RESULT 9
AAW97884
ID AAWS
XX
AC AAWS
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DT 07-C
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DE Bovi
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KW Myos
KW douh
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                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 109
                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to a substantially purified growth differentiation factor (GDF) receptor, specifically a myostatin receptor, or its functional peptide portion. Also described is a method of modulating an effect of myostatin on a cell by contacting the cell with an agent that affects myostatin signal transduction in the cell. The method and the receptor are useful for ameliorating the severity of a pathological condition characterised by an abnormal amount, development or metabolic activity of muscle or adipose tissue in a subject, particularly a wasting disease) or a metabolic disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular disease) or a metabolic disorder (e.g. obesity or type II diabetes). The promyostatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bovine; promyostatin; immunomodulator; antidepressant; anorectic; neuroprotective; antidiabetic; growth differentiation factor receptor; myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia; wasting disorder; anorexia; muscular dystrophy; neuromuscular disease; metabolic disorder; obesity; type II diabetes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New growth differentiation factor (GDF) receptors and modulators, useful for ameliorating wasting disorders such as cachexia, muscu dystrophy or neuromuscular disease or a metabolic disorder such a obesity or type II diabetes -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bos
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N-PSDB; ABK15398.
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                                                                                                                                                                                                                                                                                                                                                                        Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VINU ( OCYU)
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                                                                                                                                                                                                                                                           267
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                                                                                                                                                                                                VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 375
                                                                                                                                                                                                                                                         DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
                                                                                                                                                                                                                               VHQANPRG
                                                                                                                                                                                                                                                                                                               al Simila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        McPherron AC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fig
                                                                                                                                                                                                                                                                                                                                                                            375
                                                                                                                                                                                                                                                                                                                100.0%;
llarity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOHNS HOPKINS SCHOOL MEDICINE.
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                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             English.
                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                  Score 630; DB 23; Pred. No. 6.7e-59; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                      Indels
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AAW97884 standard; Protein; 375 AA.

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AAW97884;

Myostatin; double mus

cin; cattle;
muscling; m

ing; muscle

bovine; transforming growth uscle hyperplasia; transgenio

transgenic

factor

peta;

Bovine myostatin.

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AAB20141
ID AAB2
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AC AAB3
XX
DT 30-4
XX
DE Huma
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                                                                                                                  RESULT 10
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                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 108
                                                                                                                                                                                                                                                                                                                                                      This is the amino acid sequence of bovine myostatin, a member of the transforming growth factor beta superfamily, as encoded by the wild-type gene (see AAX24415). A mutation of this gene (see AAX24416) has been detected in cattle. Cattle of the Belgian Blue breed homozygous for the mutant gene are double-muscled. A new method of increasing muscle mass of a mammal having myostatin-expressing muscle cells, comprises administration of a nucleic acid molecule substantially complementary to at least a portion of mRNA encoding myostatin and of sufficient length to reduce myostatin expression and thus increase muscle mass. A ribozyme may also be used. Also claimed are: a method for determining muscular hyperplasia (MH) in a mammal using primers based upstream and downstream of the mutation; a diagnostic kit for determining the myostatin genotype of a sample of genetic material; a method for determining the myostatin genotype of an animal; a method for determining the myostatin convergence animal; and a transgenic bovine having a gene encoding active myostatin, and a heterologous nucleotide sequence antisense to that gene, and optionally further containing a gene encoding a nucleic acid sequence with ribozyme activity in transcriptional association with the antisense sequence.
  Human growth
                              30-APR-2001
                                                                                                                                                                                                                                                                                                                                  Sequence
                                                          AAB20141;
                                                                                     AAB20141 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 19; Page 55; 75pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Georges M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-JAN-1998;
14-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Increasing muscle mass in mammals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB;
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                                                                                                                                                                                                                    267
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                                                                                                                                                        VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS
                                                                                                                                                                                                                DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
                                                                                                                                                                                                                                   DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
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                                                                                                                                                                                                                                                                        il Similarity 99.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAX24415,
                                                                                                                                                                                                                                                                                                                                  375 AA;
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  differentiation
                             (first
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97US-0891789
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                            entry)
                                                                                                                                                                                                                                                                                     99.0%;
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                                                                                     109 AA.
                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                        Score 624; DB 20;
Pred. No. 2.9e-58;
); Mismatches 1:
factor
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C-terminal region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  decreasing myostatin
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                                                                                                                                                                                                                                                                                                   Length 375;
                                                                                                                                                                                                                                                                          Indels
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RESULT 11 AAM51935

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AAM51935;

AAM51935

standard;

protein; 109 AA.

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                                                                                                                      Query Match
Best Local S
Matches 107
                                                                                                                                                                                                                                                                                structure of
can be used f
of GDF-8 acti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (GDF-8), i.e. AAB20131). Thiologically
                                                                                                                                                                                                                                                                                                                            region limits positioned wi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Increasing the muscle mass of animals used in meat production by regulating growth differentiation factor 8 (GDF-8) activity in the animal through induction of anti-GDF-8 antibody production -
                                                                                                                                                                                                          pronounced failure.
                                                                                                                                                                                                                                                                                                                                                        T-cell epitope
P2 or P30. The
                                                                                                                                                                              Seguence
                                                                                                                                                                                                                                           treat
                                                                                                                                                                                                                                                     cattle, pigs for antibiot
                                                                                                                                                                                                                                                                                                                                                                                         autologous GGDF-8 in whi
                                                                                                                                                                                                                                                                                                                                                                                                                      are provided
                                                                                                                                                                                                                                                                                                                                                                                                                                    effecting dogrowth rate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present C-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 17; Page 93-94; 110pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2001-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Halkier T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20-JUL-1999
26-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens. Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Growth diffe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   invention to
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      vaccine;
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 61
                                                                                        بــر
VHQANPR
                VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS
                                                          DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
                                                                                      DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
                                                                                                                     107;
                                                                                                                                   Simi
                                                                                                                                                                                                                    ided that are capable of breaking autotolerance against us GDF-8. These comprise the C-terminal portion of human which a portion of the native sequence is replaced by a pitope such as the promiscuous tetanus toxin T-cell epitope 0. The high number (9) of Cys residues in the C-terminal imits the possible sites in which the T-cell epitope can be ed without major disturbance of the native 3-dimensional e of the protein. Nucleic acids encoding the GDF-8 variants sed for genetic immunisation of the animals. Down-regulation pigs and poultry used for meat production, reducing the need biotic feed-additives. Anti-GDF8 vaccines can be used to man diseases such as cancer cachexia where muscle atrophy is ed and for patients suffering from acute and chronic heart
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ifferentiation
muscle; meat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      do
                                                                                                                                                                                                                                                                                                                                                                                                                                sequence comprises the 109 amino acid residue region of human growth differentiation factor 8 e. residues 267-375 of the full-length protein (see The homodimer of this region is thought to be the y active form of GDF-8. It is an object of the produce a recombinant therapeutic vaccine capable of of farm animals. Variants of GDF-8 (see AAB20145-53) of farm animals. Variants of GDF-8 (see AAB20145-53)
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A2
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                                                                                                                      Conservative
 GSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
                                                                                                                                    larity
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                                                                                                                                                                                AA;
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99US-0145275.
                                                                                                                                  98.1%;
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cachexia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Klysner S;
                                                                                                                   Score 618; DB 22;
Pred. No. 3.4e-58;
L; Mismatches 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 antibody production
                                                                                                                                                  Length 109;
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## mutant; mutein.
                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                Down-regulation
 109
                             109
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RESULT 12
AAR63161
ID AAR63
XX AAR63
XX
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Best Local S
Matches 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention relates to muteins of a chain of a protein which, when in the form of a homodimer, has antagonistic or partial agonistic activity, and where the mutation results in the protein binding with low affinity to its receptor. The protein is a member of the transforming growth factor beta (TGFbeta) superfamily. The mutant sequences of the invention can be used in the treatment of diseases associated with the overexpression of TGFbeta family proteins, including ectopic bone formation, psoriasis, muscular atrophy, scar formation, fibrosis and cirrhosis. The present sequence is the human GDF8 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New mutein of transforming growth factor-beta superfamily protein, useful for treating or preventing e.g. ectopic bone formation, con for receptor binding -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DE10026713-A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               agonist; ectopic formation; fibros antifibrotic; heg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-MAY-2000; 2000DE-1026713.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-MAY-2000;
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                                                                                                                                                                          adipocyte; obesity;
                                                                                                                                                                                                              Growth differentiation factor-8;
                                                                                                                                                                                                                                                                                                                                                    23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                      AAR63161;
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                                          WO9421681-A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                          musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGFbeta
                                                                                                                                                                                                                                                                                  growth differentiation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nickel J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98.1%;
ilarity 98.2%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fig 6;
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sic bone formation; psoriasis; muscular atrophy; scar;
prosis; cirrhosis; osteopathic; antipsoriatic;
hepatotropic; vulnerary; GDF8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein superfamily protein GDF8
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Pred.
                                                                                                                                                                                                                                                                              factor-8 partial sequence
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                                                                                                                                                                        GDF-8;
growth
                                                                                                                                                                            cell proliferation;
factor-beta.
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RESULT 13
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Best Local S
Matches 107
                                                                                  23-MAY-1997;
05-FEB-1997;
28-APR-1997;
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Cleavage-site
Protein
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Q-PSDB;
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related
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     diagnosis of
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                                                                                                                                                                         05-FEB-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAW69883
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                                              OCYU)
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DB; Q7638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VHQANPRO
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   an be used to maintain cells before transplantation; efficiency of cell fusion and to treat obesity or deto abnormal adipocyte proliferation.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rentiation factor-8; GDF-8; mouse; transgenic animal; growth factor-beta; muscle; meat; inhibitor; obesity; r disease; muscular dystrophy; cachexia; AIDS; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  h differentiation factor-8 C-terminal fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98.1%;
larity 98.2%;
Conservative 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ifferentiation factor 8 - useful for treatment and cell proliferative disorders esp. of muscle.
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                                            JOHNS HOPKINS SCHOOL MEDICINE.
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                                                                                       97US-0862445.
97US-0795071.
97US-0847910.
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                                                                                                                                                                          98WO-US02479.
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16..17
17..126
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                                                                                                                                                                                                                                                                                                       note=
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                                                                                                                                                                                                                                                                                                    "mature polypeptide"
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Pred. No. 4e-58;
1; Mismatches 1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1,
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AAY15386
ID AAY1
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DT O8-I
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KW Grov
KW Cell
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OS Mus
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                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This is the amino acid sequence of the C-terminal portion of mouse growth differentiation factor-8 (GDF-8), a novel member of the C transforming growth factor-beta superfamily that appears to relate to various cell proliferative disorders, especially those involving muscle, nerve and adipose tissue. The sequence was deduced from a partial genomic clone (see AAV45809). A full-length sequence (see C AAW3089) has been deduced from a cDNA clone (see AAV42113). The cinvention provides novel mammalian and avian GDF-8 proteins (see C AAW3089) has been deduced from a cDNA clone (see AAV42113). The cinvention provides novel mammalian and avian GDF-8 proteins (see C AAW3089) has been deduced from a cDNA clone (see AAV42113). The content of contents of the claimed in which gDF-8 expression is disrupted or interfered with. Also claimed are: (1) chicken or turkey eggs or meat beef, milk, pork and lamb from these animals; (2) method for increasing muscle mass in conimals by administering an antibody (Ab) that binds to GDF-8; (3) inhibitory the action of GDF-8 by treating foetal or adult muscle or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic active fragment. The transgenic animals have increased muscle mass and for poultry reduced cholesterol contents. Method (3) is used to treat muscle wasting or neuromuscular diseases, muscular atrophy and cachexia. Method (4) is used to treat cancer of muscle, connective tissue and bone, or obstructive lung disease, AIDS and cachexia. Method (4) is used to treat cancer of muscle, connective tissue and bone, or obstructive lung disease, AIDS and cachexia. Method (4) is used to treat cancer of muscle, connective tissue and bone, or obstructive lung disease, AIDS and cachexia to maintain myoblasts intended for transplanting or to improve efficiency of fusion. Ab can be used to detect and connective tissue and solutions of the connection of the connecti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 107
                                                      Mus musculus
                                                                                  growth differentiation factor; tissue growth; muscle growt cell differentiation; animal feed; muscle disorder; bone degeneration; nerve degeneration; GDF-8; development; transforming growth factor beta; TGF-beta.
Cleavage-site
                                                                                                                                                                     C-terminal region of mouse Growth Differentiation Factor-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Transgenic animals with gene for growth differentiation factor-8 disrupted - have increased muscle and reduced cholesterol contents, also use of GDF-8 inhibitors for treating cancer, obesity, neuromuscular disease
                                                                                                                                                                                                                                                                       AAY15386 standard; Protein; 126 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
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N-PSDB; AAV45809.
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                                                                                                                                                                                                                                                                                                                                                          DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cch 98.1%; 31 Similarity 98.2%; 107; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2; Page 58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   126 AA;
                                                                                                                                                                                                        (first
  Location/Qualifiers 13..14
                                                                                                                                                                                                        entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 618; DB
Pred. No. 4e-5
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KW Gene
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Best Local
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Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia; neurodegenerative disease; amyotrophic lateral sclerosis; obesity; muscular dystrophy; musculodegenerative disease; tissue repair;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GDF-8 are of commercial interest.

GDF-8 expression may also have a role in the therapy of abnormal growth of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8 antisense molecule or dominant negative polypeptide could be used with foetal or adult muscle cells, bone cells or progenitor cells. These agents can be administered to a patient suffering from a disorder such as muscle wasting disease, neuro muscular disorder, muscle atrophy, osteoporosis, bone degenerative diseases, obesity or other adipocyte cell disorders, and aging for example.
                                                                                     Murine GDF-8
                                                                                                                             11-MAY-2001
                                                                                                                                                                    AAB73182;
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Cleavage of the precursor at the second of these sites would generate a mature C terminal fragment 109 amino acids in length with a predicted molecular weight of 12,400.
                                                                                                                                                                                                               AAB73182
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Search completed: January Job time : 33 secs
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                                                                                                                                                                                                                                                     The present invention relates to growth differentiation factor-8 (GDF-8) coding sequences and proteins. The present sequence is a GDF-8 protein, which was isolated in the present invention. GDF-8 is useful for treating neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and muscular dystrophy), musculodegenerative diseases or in tissue repair due to trauma, obesity and disorders related to abnormal proliferation of adipocytes. GDF-8 is also useful for treating malignancies of the various organ systems, particularly cells in muscle or adipose tissues and in gene therapy for the treatment of cell proliferative or immunological diseases mediated by GDF-8. In addition, GDF-8 is also useful for treating muscle wasting disease, neuromuscular disorder, spinal cord injury, traumatic injury, congestive obstructive pulmonary disease (COPD), AIDS or cachexia.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New substantially purified growth differentiation factor-8 polypeptide, useful for treating muscle wasting disease, obesity, muscular dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome and cachexia -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lee
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N-PSDB; AAF63547.
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1: /cgn2_6/ptodata/1/pubpaa/US08 NEW PUB.pep:*

2: /cgn2_6/ptodata/1/pubpaa/US06 NEW PUB.pep:*

3: /cgn2_6/ptodata/1/pubpaa/US06 NEW PUB.pep:*

4: /cgn2_6/ptodata/1/pubpaa/US07 NEW PUB.pep:*

5: /cgn2_6/ptodata/1/pubpaa/US07 NEW PUBCOMB.pep:*

7: /cgn2_6/ptodata/1/pubpaa/US07 PUBCOMB.pep:*

8: /cgn2_6/ptodata/1/pubpaa/US08 PUBCOMB.pep:*

9: /cgn2_6/ptodata/1/pubpaa/US09 NEW PUB.pep:*

10: /cgn2_6/ptodata/1/pubpaa/US09 PUBCOMB.pep:*

11: /cgn2_6/ptodata/1/pubpaa/US10 NEW PUB.pep:*

12: /cgn2_6/ptodata/1/pubpaa/US10 PUBCOMB.pep:*

13: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep:*

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Sequence 12, Appl Sequence 21, Appl Sequence 6, Appli Sequence 33, Appl Sequence 35, Appli Sequence 8, Appli Sequence 14, Appl Sequence 14, Appl Sequence 14, Appl Sequence 23, Appl Sequence 27, Appl Sequence 29, Appl Sequence 29, Appl Sequence 4, Appl Sequence 6, Appl Sequence 6, Appl Sequence 12, Appl Sequence 25, Appl
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ALIGNMENTS

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GENERAL INFORMATION:

APPLICANT: Lee, Se-Jin

APPLICANT: Lee, Se-Jin

APPLICANT: Lee, Se-Jin

APPLICANT: McPherron, Alexandra C.

TITLE OF INVENTION: GROWITH DIFFERENTIATION FACTOR RECEPTORS,

TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME

FILL REFERENCE: JHU1470-2

CURRENT APPLICATION NUMBER: US/09/841,730

CURRENT FILING DATE: 2001-04-24

PRIOR APPLICATION NUMBER: 09/626,896

PRIOR APPLICATION NUMBER: 09/626,896

PRIOR FILING DATE: 2000-07-27

PRIOR APPLICATION NUMBER: 09/485,046

PRIOR APPLICATION NUMBER: PCT/US98/15598

PRIOR APPLICATION NUMBER: PCT/US98/15598

PRIOR APPLICATION NUMBER: PCT/US98/15598

PRIOR APPLICATION NUMBER: 60/054,461

PRIOR FILING DATE: 1998-07-28

PRIOR FILING DATE: 1997-08-04
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US-09-841-730-12
; Sequence 12, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
Alexandra C.
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LENGTH: 375
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al Similarity 100.0%; Pred. No. 7.2e-59;
109; Conservative 0; Mismatches 0;
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RESULT 2

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US-09-859-211-6

Sequence 6, Application US/09859211

Patent No. US20020157125A1

GENERAL INFORMATION:

APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.

TITLE OF INVENTION: GROWTH DIFFERENTIATION
FILE REFERENCE: 07265/144001

CURRENT APPLICATION NUMBER: US/09/859,211

CURRENT FILING DATE: 2001-05-15
PRIOR APPLICATION NUMBER: 09/019,070
PRIOR FILING DATE: 1998-02-05
PRIOR APPLICATION NUMBER: 08/862,445
PRIOR APPLICATION NUMBER: 08/862,445
PRIOR FILING DATE: 1997-05-23

PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: 08/033,923
PRIOR FILING DATE: 1994-03-18

PRIOR FILING DATE: 1994-03-18

PRIOR FILING DATE: 1994-03-18

PRIOR FILING DATE: 1994-03-18

PRIOR FILING DATE: 1993-03-19

NUMBER OF SEQ ID NOS: 51
SOFTWARE: FastSEQ for Windows Version 4.0
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PRIOR APPLICATION NUMBER: 09/019,070

PRIOR FILING DATE: 1998-02-05

PRIOR APPLICATION NUMBER: 08/862,445

PRIOR APPLICATION NUMBER: 08/847,910

PRIOR FILING DATE: 1997-04-28

PRIOR APPLICATION NUMBER: 08/795,071

PRIOR FILING DATE: 1997-02-05

PRIOR APPLICATION NUMBER: 08/525,596

PRIOR APPLICATION NUMBER: 08/525,596

PRIOR APPLICATION NUMBER: PCT/US94/03019

PRIOR APPLICATION NUMBER: 08/033,923

PRIOR FILING DATE: 1994-03-18

PRIOR FILING DATE: 1993-03-19

NUMBER OF SEQ ID NOS: 51
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SEQ ID NO 21
SEQTH: 375
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Patent No. US2002015
GENERAL INFORMATION:
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Best Local :
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APPLICANT: McPherron, Alexan
TITLE OF INVENTION: GROWTH DI
FILE REFERENCE: 07265/144001
CURRENT APPLICATION NUMBER: 1
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). US20020157125A1
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DWTH DIFFERENTIATION FACTOR-8
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; LENGTH: 126
; TYPE: PRT
; ORGANISM: Mus
US-09~859-211-6
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US-09-859-211-35
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US-09-859-211-33
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               Sequence 35, Applicat
Patent No. US20020157
GENERAL INFORMATION:
APPLICANT: Lee, Se-J
APPLICANT: McPherro
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PRIOR APPLICATION NUMBER: 08/795,071

PRIOR FILING DATE: 1997-02-05

PRIOR APPLICATION NUMBER: 08/525,596

PRIOR APPLICATION NUMBER: PCT/US94/03019

PRIOR FILING DATE: 1994-03-18

PRIOR APPLICATION NUMBER: 08/033,923

PRIOR APPLICATION NUMBER: 08/033,923

PRIOR FILING DATE: 1993-03-19

NUMBER OF SEQ ID NOS: 51

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 33
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CURRENT APPLICATION NUMBER: US/09/859,;
CURRENT FILING DATE: 2001-05-15
PRIOR APPLICATION NUMBER: 09/019,070
PRIOR FILING DATE: 1998-02-05
PRIOR APPLICATION NUMBER: 08/862,445
PRIOR FILING DATE: 1997-05-23
PRIOR APPLICATION NUMBER: 08/847,910
PRIOR APPLICATION NUMBER: 08/847,910
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Best Local
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APPLICANT: McPherron, Alexandra C.
APPLICANT: McPherron, Alexandra C.
APPLICANT: McPherron, Alexandra C.
APPLICANT: McPherron, Alexandra C.
APPLICANT: McPherron McPherron FACTOR-8
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
TITLE OF ENERGY.
APPLICANT: McPherron, Alexandra C. TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 FILE REFERENCE: 07265/144001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 130
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                                                                                          35, Application US/09859211
b. US20020157125A1
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FastSEQ for Windows Version 4.0
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larity 98.2%;
Conservative
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larity 98.2%;
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                                                        Se-Jin
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Sequence 8, Application US/09841730

Patent No. US20020157126A1

REPLICANT: Lee, Se-Jin
APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.

TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
FILE REFERENCE: JHU1470-2
CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: US/09/841,730
CURRENT FILING DATE: 2000-07-27
PRIOR APPLICATION NUMBER: 09/626,896
PRIOR APPLICATION NUMBER: 09/485,046
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: PCT/US98/15598
PRIOR FILING DATE: 1998-07-28
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR FILING DATE: 1997-08-01
NUMBER: FCC/US98/15598
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US-09-841-730-8
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PRIOR APPLICATION NUMBER: 09/019,070
PRIOR FILING DATE: 1998-02-05
PRIOR FILING DATE: 1998-02-05
                                                                             Query Match
Best Local S
Matches 107
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Best Local S
Matches 107
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LENGTH: 226
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SEQ ID NO 8
LENGTH: 374
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APPLICATION NUMBER: 08/862,445

APPLICATION NUMBER: 08/847,910

OR APPLICATION NUMBER: 08/795,071

OR APPLICATION NUMBER: 08/795,071

OR APPLICATION NUMBER: 08/795,071

OR FILING DATE: 1997-02-05

OR FILING DATE: 1997-02-05
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APPLICATION NUMBER: 08/033,923
FILING DATE: 1993-03-19
R OF SEQ ID NOS: 51
ARE: FastSEQ for Windows Version
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APPLICATION NUMBER: 08/525,596
FILING DATE: 1995-10-26
APPLICATION NUMBER: PCT/US94/03019
DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
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Similarity 98.2%;
07; Conservative
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                                                                        Score 618; DB 9; : Pred. No. 1.3e-57; l; Mismatches 1;
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                                                                                                          Length 374;
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US-09-841-730-14
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; ORGANISM: Homo
US-09-841-730-2
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; ORGANISM: Porcine US-09-841-730-14
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US-09-841-730-2
                                                                                                                                                    CURRENT APPLICATION NUMBER: US/09/841,730
CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/626,896
PRIOR FILING DATE: 2000-07-27
PRIOR APPLICATION NUMBER: 09/485,046
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: PCT/US98/15598
PRIOR FILING DATE: 1998-07-28
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR FILING DATE: 1997-08-01
NUMBER OF SEQ ID NOS: 29
SOFTWARE: FastSEQ for Windows Version 4.0
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PRIOR APPLICATION NUMBER: 09/626,896
PRIOR FILING DATE: 2000-07-27
PRIOR APPLICATION NUMBER: 09/485,046
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: PCT/US98/15598
PRIOR FILING DATE: 1998-07-28
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR FILING DATE: 1997-08-01
NUMBER OF SEQ ID NOS: 29
SOFTWARE: FastSEQ for Windows Version 4.0
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SOFTWARE: FAST
SEQ ID NO 14
FINICITH: 375
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SEQ ID NO 2
LENGTH: 3
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GENERAL INFORMATION:
APPLICANT: Lee, Se-
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GENERAL INFORMATION:
APPLICANT: Lee, Se-
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TITLE OF IN
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CURRENT APPLICATION NUMBER: US/09/841,730
CURRENT FILING DATE: 2001-04-24
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                                                                 TYPE: PRT
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McPher
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APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METH
FILE REFERENCE: JHU1470-2
CURRENT APPLICATION NUMBER: US/09/841,730
CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/626,896
PRIOR FILING DATE: 2000-07-27
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: 09/485,046
PRIOR FILING DATE: 1998-07-28
PRIOR FILING DATE: 1998-07-28
PRIOR FILING DATE: 1998-07-28
PRIOR FILING DATE: 1997-08-01
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR FILING DATE: 1997-08-01
APPLICANT: Lee, Se-Jin

APPLICANT: Lee, Se-Jin

APPLICANT: McPherron, Alexandra C.

TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8

FILE REFERENCE: 07265/144001

CURRENT APPLICATION NUMBER: US/09/859,211

CURRENT FILING DATE: 2001-05-15

PRIOR APPLICATION NUMBER: 09/019,070

PRIOR APPLICATION NUMBER: 08/862,445

PRIOR APPLICATION NUMBER: 08/862,445

PRIOR APPLICATION NUMBER: 08/847,910

PRIOR FILING DATE: 1997-05-23

PRIOR APPLICATION NUMBER: 08/847,910

PRIOR FILING DATE: 1997-04-28

PRIOR APPLICATION NUMBER: 08/795,071
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US-09-841-730-18
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Best I
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SOFTWARE: Fast
SEQ ID NO 18
SEQ TO NO 18
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107; Conservative
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Pred. No. 1.3e-57;
l; Mismatches 1
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Pred. No. 1.3e-57;
L; Mismatches 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No. USZUVZVII
GENERAL INFORMATION:
APPLICANT: Lee, Se-Jin
MCPherron, J
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SEQ ID NO 23
LENGTH: 375
                                                                                             Matches
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Best Local
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PRIOR APPLICAT
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R APPLICATION NUMBER: 08/525,596
R FILING DATE: 1995-10-26
DR APPLICATION NUMBER: PCT/US94/03019
DR FILING DATE: 1994-03-18
DR APPLICATION NUMBER: 08/033,923
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                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 08/862,445
FILING DATE: 1997-05-23
APPLICATION NUMBER: 08/847,910
FILING DATE: 1997-04-28
APPLICATION NUMBER: 08/795,071
                                                                                                                                                                                                                                                FILING I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 1994-03-18
APPLICATION NUMBER: 08/
FILING DATE: 1993-03-19
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NT FILING DATE: 2001-05-15
APPLICATION NUMBER: 09/019,070
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VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
             VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 109
                                             VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
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RENCE: 07265/144001
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CATION NUMBER: 08/525,596
E DATE: 1995-10-26
CATION NUMBER: PCT/US94/03019
E DATE: 1994-03-18
CATION NUMBER: 08/033,923
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DATE: 1993-0
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TION NUMBER: 08/862,445
DATE: 1997-05-23
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SEQ for Windows
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WTH DIFFERENTIATION
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                                                                                          Score 618; DB 9; Le
Pred. No. 1.3e-57;
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Pred. No. 1.3e-57;
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Sequence 27, Application US/09859211
; Patent No. US20020157125A1
; GENERAL INFORMATION:
; APPLICANT: Lee, Se-Jin
APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
FILE REFERENCE: 07265/144001
CURRENT APPLICATION NUMBER: US/09/859,211
CURRENT FILING DATE: 2001-05-15
PRIOR APPLICATION NUMBER: 09/019,070
PRIOR APPLICATION NUMBER: 08/862,445
PRIOR FILING DATE: 1997-05-23
PRIOR APPLICATION NUMBER: 08/847,910
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: 08/033,923
PRIOR PILING DATE: 1995-10-26
PRIOR APPLICATION NUMBER: 08/033,923
PRIOR PILING DATE: 1993-03-18
PRIOR PILING DATE: 1993-03-18
PRIOR PILING DATE: 1993-03-19
NUMBER OF SEQ ID NOS: 51
SOFTWARE: FastSEQ for Windows Version 4.0
          Sequence 29, Application US/09859211

Patent No. US20020157125A1

GENERAL INFORMATION:

APPLICANT: Lee, Se-Jin

APPLICANT: McPherron, Alexandra C.

TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8

FILE REFERENCE: 07265/144001

CURRENT APPLICATION NUMBER: US/09/859,211

CURRENT APPLICATION NUMBER: 09/019,070

PRIOR APPLICATION NUMBER: 09/019,070

PRIOR FILING DATE: 1998-02-05

PRIOR APPLICATION NUMBER: 08/862,445

PRIOR APPLICATION NUMBER: 08/847,910

PRIOR FILING DATE: 1997-04-28

PRIOR APPLICATION NUMBER: 08/795,071

PRIOR FILING DATE: 1997-02-05

PRIOR FILING DATE: 1997-02-05

PRIOR FILING DATE: 1995-10-26

PRIOR FILING DATE: 1995-10-26

PRIOR FILING DATE: 1994-03-18

PRIOR APPLICATION NUMBER: 08/033,923

PRIOR FILING DATE: 1993-03-19
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US-09-859-211-27
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375
SEQ
ID NOS:
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Pred. No. 1.3e-57;
l; Mismatches 1;
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; SEQ ID NO 29
; LENGTH: 375
; TYPE: PRT
; ORGANISM: Porcine
US-09-859-211-29
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US-09-454-540-5
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                                                  US-09-454-540-5
                                                                                                                                                 CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: HAILE, PH.D., LISA A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/106001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5099
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 375 amino acids
TYPE: amino acids
TYPE: amino acids
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Patent No. US200
GENERAL INFORMA
Query Match
Best Local S
Matches 107
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Matches
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                                                                                                                       TYPE: amino a STRANDEDNESS: TOPOLOGY: lin MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-11
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish 5 5
                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0,

CURRENT APPLICATION DATA:
                                                                                                             IMMEDIATE
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APPLICATION NUMBER:
                                                                                    FEATURE:
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larity 98.2%;
Conservative
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06-DEC-1999
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Pred. No. 1.3e-57;
1; Mismatches 1;
  Score 618; DB 10;
Pred. No. 1.3e-57;
L; Mismatches 1;
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Sequence 4, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
; APPLICANT: Lee, Se-Jin
; APPLICANT: Lee, Se-Jin
; APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
; FILE REFERENCE: JHU1470-2
; CURRENT APPLICATION NUMBER: US/09/841,730
; CURRENT FILING DATE: 2001-04-24
; PRIOR APPLICATION NUMBER: 09/626,896
; PRIOR FILING DATE: 2000-07-27
; PRIOR APPLICATION NUMBER: 09/485,046
; PRIOR APPLICATION NUMBER: 09/485,046
; PRIOR PILING DATE: 1900-01-31
; PRIOR APPLICATION NUMBER: PCT/US98/15598
; PRIOR APPLICATION NUMBER: 60/054,461
; PRIOR FILING DATE: 1998-07-08-01
; NUMBER OF SEQ ID NOS: 29
; SOFTWARE: FastSEQ for Windows Version 4.0
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Search completed: January 31, 2003, 18:27:18 Job time : 8 secs
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; LENGTH: 376
; TYPE: PRT
; ORGANISM: Mus musculus
US-09-841-730-4
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Best Local Similarity 98.2%; Pred. No. 1.3e-57;
Matches 107; Conservative 1; Mismatches 1;
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Sequence:
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Maximum DB seq length: 200000000
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'cgn2 6/ptodata/2/paa/US06 NEW COMB.pep:*

'cgn2 6/ptodata/2/paa/US07 NEW COMB.pep:*

'cgn2 6/ptodata/2/paa/US08 NEW COMB.pep:*

'cgn2 6/ptodata/2/paa/US09 NEW COMB.pep:*

'cgn2 6/ptodata/2/paa/US10 NEW COMB.pep:*

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US-10-251-115-2
US-10-278-803-6
US-10-335-483-6
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US-09-620-586B-22
US-09-620-586B-22
US-09-620-586B-2
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US-10-278-803-14
US-10-278-803-27
US-10-278-803-27
US-10-278-803-27
US-10-251-115-8
US-09-620-586B-4
US-09-620-586B-4
US-09-620-586B-7
US-09-620-586B-7
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Best Local S
Matches 109
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SOFTWARE: Pac
SEQ ID NO 12
SEQ ID NO 12
    ORGANISM: Bos
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equence 83	equence 831,	equence 19	equence 10	equence 3:	equence 20	Sequence 16, Appl	equence 2	equence 19	equence 1	equence 9,	eguence 2,	equence 6,	equence 4,	equence 8,	equence 8,	equence 6,	equence 10,	equence 12, App

ALIGNMENTS

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TYPE: PRT
CRGANISM: Bos taurus
FEATURE:
NAME/KEY: PEPTIDE
LOCATION: (1)..(109)
OTHER INFORMATION: I
US-09-620-586B-12
          Sequence 5, Applicatic GENERAL INFORMATION: APPLICANT: M&E Biotec TITLE OF INVENTION: NET SECURE OF SEQ ID NOS: NUMBER OF SEQ ID NOS: SOFTWARE: Patentin Versey Dength: 375
LENGTH: 375
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 12, Application US/09620586B

GENERAL INFORMATION:

APPLICANT: M&E Biotech A/S

TITLE OF INVENTION: Method for down-regulating GDF-8 activity

FILE REFERENCE: 3631-0117P

CURRENT APPLICATION NUMBER: US/09/620,586B

CURRENT FILING DATE: 2000-07-20

NUMBER OF SEQ ID NOS: 24
                                                                                                                                                                                                                                                                                       VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                                                                                                                                            DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
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                                                                                Biotech A/S
TION: Method for down-regulating GDF-8 activity: 3631-0117P
ATION NUMBER: US/09/620,586B
DATE: 2000-07-20
ID NOS: 24
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; FEATURE:
; NAME/KEY: PEPTIDE
; LOCATION: (1)..(109)
; OTHER INFORMATION: 1
US-09~620-586B-11
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US-10-251-115-2
                                                                                                                                  RESULT 4
US-09-620-586B-11
; Sequence 11, Application US/09620586B
; GENERAL INFORMATION:
; APPLICANT: M&E Biotech A/S
; TITLE OF INVENTION: Method for down-regulating GDF-8 activity
; FILE REFERENCE: 3631-0117P
; CURRENT APPLICATION NUMBER: US/09/620,586B
; CURRENT FILING DATE: 2000-07-20
; NUMBER OF SEQ ID NOS: 24
; NUMBER OF SEQ ID NOS: 24
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; TYPE: PRT
; ORGANISM: Bos taurus
US-10-251-115-2
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GENERAL INFORMATION:

APPLICANT: Grobet, Luc; Georges, Michel; and Poncelet, Dominique
TITLE OF INVENTION: MUTATIONS IN THE MYOSTATIN GENE CAUSING DOUBLE-MUSCLING IN MAMMAI
FILE REFERENCE: 52836/00016
CURRENT APPLICATION NUMBER: US/10/251,115
CURRENT FILING DATE: 2002-09-20
PRIOR APPLICATION NUMBER: US/09/482,573
PRIOR APPLICATION NUMBER: 08/891,789
PRIOR APPLICATION NUMBER: 08/891,789
PRIOR APPLICATION NUMBER: 09/007,761
PRIOR APPLICATION NUMBER: 09/007,761
PRIOR APPLICATION NUMBER: PCT/IB98/01197
PRIOR APPLICATION NUMBER: PCT/IB98/01197
PRIOR APPLICATION NUMBER: PCT/IB98/01197
PRIOR FILING DATE: 1998-07-14
NUMBER OF SEQ ID NOS: 54
                                                                                                       NUMBER
SOFTWARE: Fac
SEQ ID NO 11
STORY 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
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LENGTH: 375
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                                                                              LENGTH: 109
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                      267
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al Similarity 100.0%;
109; Conservative 0
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Similarity 100.0%;
)9; Conservative 0
                Identical to
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Pred. No. 3.3e-62;
Mismatches 0;
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Pred. No. 3.3e-62;
; Mismatches 0;
                residues 267-375
                'n
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RESULT 5
US-10-278-803-6
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Best Local
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Best Local
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                          INFORMATION FO
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APPLICATION NUMBER: US/10/278,803
FILING DATE: 22-Oct-2002
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/451,501
FILING DATE: 30-Nov-1999
APPLICATION NUMBER: 08/795,071
FILING DATE: <Unknown>
APPLICATION NUMBER: PCT/US94/03019
FILING DATE: 18-March-1994
ATTORNEY/AGENT INFORMATION.
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FRAGMENT
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MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows 95
COFTWARE: FastSEQ for Windows Version 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Se-Jin Lee et al.,
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
STATE: CA
                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:

NAME: Lisa A. Haile, Ph.D.

REGISTRATION NUMBER: 38,347

REFERENCE/DOCKET NUMBER: 07265/105001

TELECOMMUNICATION INFORMATION:

TELEPHONE: 619/678-5070

TELEPAX: 619/678-5099

MATION FOR SEQ ID NO: 6:
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 DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 77
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VHQANPR
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                                                                                       DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
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LENGTH: 126 amino acids

TYPE: amino acid

TOPOLOGY: linear

ECULE TYPE: protein

GMENT TYPE: internal

GMENT TYPE: internal
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ilarity 98.2%;
Conservative 1
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ilarity 98.2%;
Conservative
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                                                                                                                            Score 618; DB 6; Length 126; Pred. No. 2.5e-61; 1; Mismatches 1; Indels
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Pred. No. 2.1e-61;
l; Mismatches 1;
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                                                                                                                              0,
                                                                                                                             Gaps
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US-09-620-586B-23; Sequence 23, Application US/09620586B; GENERAL INFORMATION:

APPLICANT: M&E Biotech A/S; TITLE OF INVENTION: Method for down-regulating GD; FILE REFERENCE: 3631-0117P; CURRENT APPLICATION NUMBER: US/09/620,586B; CURRENT FILING DATE: 2000-07-20; NUMBER OF SEQ ID NOS: 24; SOFTWARE: PatentIn Ver. 2.1; SEQ ID NO 23
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US-10-335-483-6
; Sequence 6, Application US/10335483
; GENERAL INFORMATION:
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Best I
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REGISTRATION NUMBER: 31,678
REFERENCE/DOCKET NUMBER: 07265
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-678-5070
TELEFAX: 619-678-5099
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/10/335,483
FILING DATE: 31-Dec-2002
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/177,860
FILING DATE: <Unknown>
APPLICATION NUMBER: 08/525,596
FILING DATE: 19-SEP-1995
APPLICATION NUMBER: PCT/US94/07762
FILING DATE: 08-JUL-1994
ATTORNEY/AGENT INFORMATION:
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FRAGMENT
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MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows95
SOFTWARE: FastSEQ for Windows
CURRENT APPLICATION DATA:
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COMPUTER READABLE
MEDIUM TYPE:
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ADDRESSEE: Fish & Richardson
STREET: 4225 Executive Square
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Huynh, Thanh
Lee, Se-Jin
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
NUMBER OF SEQUENCES: 32
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                                                                                                                                                                                                                                   VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
                                                                                                                                                                                                                                                   VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS
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                                                                                                                                                                                                                                                                                                                                                                    107; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 126 amino
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3 TYPE: protein
F TYPE: internal
F TYPE: TYPE: SEQ 1
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e, Suite
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; OTHER INFORMATION: Lys Glu or Glu Gly
US-09-620-586B-23
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Best Local Similarity
                                                                                                                                                                                                                                                   CURRENT FILING
NUMBER OF SEQ I
SOFTWARE: Paten
                                                                                                                                                                                                                                             SEQ ID NO
                                                                                                                                                                                                                                                                 APPLICANT: M&E Biotech A/S
TITLE OF INVENTION: Method for down-regulating
FILE REFERENCE: 3631-0117P
CURRENT APPLICATION NUMBER: US/09/620,586B
CURRENT FILING DATE: 2000-07-20
NUMBER OF SEQ ID NOS: 24
                                                       FEATURE:
NAME/KEY: SIMILAR
NAME/TON: (1)..(10
                                                                                                                                                                           TYPE: PRT
ORGANISM: Arti
FEATURE:
NAME/KEY: SIMI
            FEATURE: NAME/KEY:
                                                                                               LOCATION: (110)..(124)
OTHER INFORMATION: Tetanus toxoid P2 epitope
FEATURE:
NAME/KEY: SIMILAR
LOCATION: (125)..(145)
OTHER INFORMATION: Diptheria toxoid P30 epito
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LOCATION: (124)
OTHER INFORMATION: Cys
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OTHER INFORMATION:
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NAME/KEY: SITE
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LOCATION: (52)..(160)
OTHER INFORMATION: Identical
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LOCATION: (1)..(15)
OTHER INFORMATION: Identical
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OTHER INFORMATION: Tetanus
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                                    LOCATION: (1)..(109)
OTHER INFORMATION: 109 C-terminal residues of human and bovine GDF-8
OTHER INFORMATION: (residues 267-375 in SEQ ID NO: 1)
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SIMILAR (146)...
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(124)
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Pred. No. 3.1e-61;
L; Mismatches 1
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APPLICANT: LEE, Se-Jin
APPLICANT: LEE, Se-Jin
APPLICANT: McPHERRON, Alexandra C.
TITLE OF INVENTION: TRANSGENIC NON-HUMAN ANIMALS EXI
TITLE OF INVENTION: POLYPEPTIDE, AND METHODS OF MAI
FILE REFERENCE: JHU1200-10
CURRENT APPLICATION NUMBER: US/09/871,604A
CURRENT FILING DATE: 2001-05-31
PRIOR APPLICATION NUMBER: US 09/123,929
PRIOR FILING DATE: 1998-07-28
PRIOR FILING DATE: 1998-07-28
PRIOR FILING DATE: 1998-02-06
PRIOR FILING DATE: 1998-02-06
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US-09-620-586B-2
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US-09-871-604A-5
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GENERAL INFORMATION:
APPLICANT: M&E Biotech A/S
TITLE OF INVENTION: Method for down-regulating GDF-8
FILE REFERENCE: 3631-0117P
CURRENT APPLICATION NUMBER: US/09/620,586B
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Best I
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GENERAL INFORMATION:
APPLICANT: THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE
APPLICANT: LEE, Se-Jin
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TYPE: PRT
ORGANISM: Meleagris
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LOCATION: (90)..(9)
OTHER INFORMATION:
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larity 98.2%;
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1; Mismatches
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Pred. No. 6.9e-61;
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SEQ ID NO 5
LENGTH: 375
TYPE: PRT
ORGANISM: Human (
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LENGTH: 375
TYPE: PRT
ORGANISM: Hom
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GENERAL INFORMATION:
APPLICANT: M&E Biotech A/S
TITLE OF INVENTION: Method for down-regulating GDF-8
FILE REFERENCE: 3631-0117P
CURRENT APPLICATION NUMBER: US/09/620,586B
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CURRENT APPLICA
CURRENT FILING
Query Match
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SOFTWARE: Patentin Ver. 2.1
SEO ID NO 1
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SENERAL INFORMATION:
APPLICANT: M&E Biotech A/S
TITLE OF INVENTION: Method for down-regulating GDF-8
FILE REFERENCE: 3631-0117P
CURRENT APPLICATION NUMBER: US/09/620,586B
CURRENT FILING DATE: 2000-07-20
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                                      TYPE: PRT
ORGANISM: Gallus
                                                                 LENGTH:
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FILING DATE: 1996-09-03
APPLICATION NUMBER: US 08/272,763
FILING DATE: 1994-07-08
R OF SEQ ID NOS: 12
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Conservative
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Pred. No. 7.1e-61;
l; Mismatches 1
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Pred. No. 7.1e-61;
Mismatches 1
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RESULT 14

US-10-278-803-14
; Sequence 14, Application US/1027880J;
; GENERAL INFORMATION:
APPLICANT: Se-Jin Lee et al.,
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
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; TYPE: PRT
; ORGANISM: Sus scrofa
US-09-620-586B-8
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GENERAL INFORMATION:
APPLICANT: M&E Biotech A/S
TITLE OF INVENTION: Method for down-regulating GDF-8 activity
FILE REFERENCE: 3631-0117P
CURRENT APPLICATION NUMBER: US/09/620,586B
CURRENT FILING DATE: 2000-07-20
NUMBER OF SEQ ID NOS: 24
SOFTWARE: Patentin Ver. 2.1
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COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
COMPUTER: IBM Compatible
COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/10/278,803
FILING DATE: 22-Oct-2002
CLASSIFICATION DATA:
APPLICATION NUMBER: US/09/451,501
FILING DATE: 30-Nov-1999
APPLICATION NUMBER: 08/795,071
FILING DATE: -Unknown>
APPLICATION NUMBER: PCT/US94/03019
FILING DATE: 18-March-1994
ATTORNEY/AGENT INFORMATION:
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Similarity 98.2%;
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Pred. No. 7.1e-61;
1; Mismatches 1
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US-10-278-803-19
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; GENERAL INFORMA
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                                                                                                                                                   APPLICATION NUMBER: US/10/278,803
FILING DATE: 22-Oct-2002
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/451,501
FILING DATE: 30-NOV-1999
APPLICATION NUMBER: 08/795,071
FILING DATE: <Unknown>
APPLICATION NUMBER: PCT/US94/03019
FILING DATE: 18-March-1994
ATTORNEY/AGENT INFORMATION:
NAME: Lisa A. Haile, Ph.D.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/105001
TELECOMMUNICATION INFORMATION:
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COMPUTER READABLE E
MEDIUM TYPE: I
COMPUTER: IBM
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REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/105001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
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TOPOLOGY: Illication
CULE TYPE: protein
Type: internal
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CON FOR SEQ ID NO: 14:
JENCE CHARACTERISTICS:
LENGTH: 375 amino acids
TYPE: amino acid
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                                                  TELEPHONE: 619/678-5070
TELEFAX: 619/678-5099
ON FOR SEQ ID NO: 19:
IENCE CHARACTERISTICS:
LENGTH: 375 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
CPERATING SYSTEM: Windows95
SOFTWARE: FastSEQ for Windows Version 2.0
NT APPLICATION DATA:
                                                                                                                       TELEFAX:
                      TOPOLOGY: linear
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NVENTION: GROWTH DIFFERENTIATION FACTOR-8
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Pred. No. 7.1e-61;
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FEATURE:
NAME/KEY: Protein
LOCATION: 1..375
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page 6

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Q90wc9 morone saxa
Q90wc8 morone amer
Q90w17 salmo salar
Q90w06 umbrina cir
Q98tb3 morone chry
Q98ub3 salvelinus
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Q9bg54 sus scrofa
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Q9xs62 drosophila
Q9xz62 drosophila
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Compugen Ltd
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Q8wns6 bos taurus
Q9tsy2 sus scrofa
Q9gm97 equus cabal
Q95j86 macaca fasc
Q8uwd8 columba liv
Q8uwd7 coturnix ch
Q98sp0 gallus gall
Q8uwd9 anser anser
Q8uwe0 anas platyr
Q95n11 capra hircu
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Q90ddi8 salmo salar
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ID QBWNS6;
AC QBWNS6;
DT 01-MAR-2002
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DT 01-JUN-2002
DE Myostatin.
GN GDF8.
OS Bos taurus (1
OC Eukaryota; MOC Mammalia; Eufor OC Moridae; Bovor OC NCBI_TaxID=9;
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RP SEQUENCE FROM RA Shibata M., I RT "Genomic orginal tred (DI DR InterPro; IP) DR InterPro; IP) DR InterPro; IP) DR InterPro; IP) DR Pfam; PF00681 DR Pfam; PF00681 DR Pfam; PF00681 DR PROSITE; PS00 SEQUENCE 3
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                                                                            Jon and sequence (1001) to the EM (1002048; EF-hand).

JR InterPro; IPR002048; EF-hand).

InterPro; IPR001111; TGFb.

IR Pfam; PF00019; TGF-beta; I.

R ProDom; PD000357; TGFb; 1.

R SMART; SM00204; TGFB; 1.

PROSITE; PS00018; EF
PROSITE; PS00018; EF
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SEQUENCE
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Matches 109
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Eukaryota; Met
Mammalia; Eutl
Bovidae; Bovir
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Shibata M., Muramoto T., Aikawa K.;
Shibata M., Muramoto T., Aikawa K.;
"Genomic organization and sequence of the myostatin gene
"Genomic of the EMBL/GenBank/DDBJ databases.
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                                                                                               )357; TGFb; 1.
)4; TGFB; 1.
)018; EF HAND; UNKNOWN 1.
)250; TGF BETA 1; UNKNOWN 1.
)250; TGF BETA 1; UNKNOWN 1.
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                                                                                                                                                                                                                                                                                                   heria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                             TGFb_propeptide; 1.7; TGFb; 1.
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Q9XS86
Q9XS86
Q98TY4
Q90Z79
Q90Z62
Q9V4F4
Q95MF3
Q8QH11
Q9DGE9
Q9DGE9
Q9DGF0
Q9DGF0
Q9DGF0
Q9DGF0
Q9DGF0
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Q9DGF0
Q9DGF1
Q9DGF0
Q9DGF0
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Q9DGF0
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Last sequence update)
Last annotation update)
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Q90WC9
Q90WC7
Q90W17
Q90W06
Q98TB3
Q98TB3
Q98UB3
Q98UB3
                                                        Score 630; DB 6;
Pred. No. 2.6e-65;
Mismatches 0;
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bovine.";

Length 375;

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Best Local S
Matches 107
                                                                                                                                                                                                                                                                                                                                               InterPro; IPR002400; GF cysknot.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb propeptide; 1
PRINTS; PR00438; GFCYSKNOT.
PRODom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                     Stratil A., Kopecny M.;
"Genomic organization, sequence
myostatin (GDF8; MSTN) gene.";
Anim. Genet. 30:468-470(1999).
-!- SIMILARITY: BELONGS TO THE
EMBL; AJZ37920; CAB40844.1; -.
HSSP; P18075; 1EMP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sus scrofa (Pig).
Eukaryota; Metazoa; Mammalia; Eutheria; NCBI_TaxID=9823;
                                                                                                                   Q9GM97;
Q9GM97;
01-MAR-2001
01-MAR-2001
01-JUN-2002
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NON TER
SEQUENCE 162
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Q9TSY2;
01-MAY-2000
Hosoyama T., Yamanuu.
"Molecular cloning of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MSTN
                                                                                                  Myostatin.
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01-MAY-2000 (TrEMBLrel.
01-JUN-2002 (TrEMBLrel.
                             SEQUENCE FROM N.A.
STRAIN=THROUOGHBRED;
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                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9796;
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                                                                                        Equus caballus
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                                                                                                                                                                                                                                                                                    107;
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ilarity 98.2%;
Conservative
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                      Yamanouchi K.,
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                                                                (Horse).
.zoa; Chordata; Craniata; Vertebrata;
!ria; Perissodactyla; Equidae; Equus.
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Cetartiodactyla;
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            equine
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16,
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Last sequence update)
Last annotation update)
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Last annotation update)
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            Tojo H., Tachi C.; myostatin cDNA and
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Pred.
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No. 2.8e-64;
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             serum
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                                                                               Euteleostomi;
              level
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            of
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RESULT 4
Q95J86
ID Q95J
AC Q95J
AC Q95J
DT 01-I
DT 01-I
DT 01-I
OT 01-
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Glycoprote:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. TISSUE=GASTROCNEMI Smock S.L., Owen T "Cloning of the op (cynomolgus macaque Submitted (SEP-200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q95J86;
Q95J86;
01-DEC-2001
01-DEC-2001
01-JUN-2002
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-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
EMBL; AB033541; BAB16046.1; -.
HSSP; P18075; 1BMP.
                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; InterPro;
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SMART; SM00204; TGFB; 1.

PROSITE; PS00018; EF_HAND; UNKNOWN_1.

PROSITE; PS00250; TGF_BETA_1; 1.

Glycoprotein.

SEQUENCE 375 AA; 42736 MW; 6F424E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Myostatin.
Macaca fascicularis (Crab eating macaque) (Cynomolgus monkey).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
Cercopithecinae; Macaca.
NCBI_TaxID=9541;
                                                                                                                                                                                                                                                          Glycoprotein
SEQUENCE 3
                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IF Pfam; PF0001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                   267
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                                                                                                                                                                                                                                                                                                                                                               ck S.L., Owen T.A.;
oning of the open reading frame DNA for macaque fascicularis
nomolgus macaque) myostatin (GDF8).";
mitted (SEP-2001) to the EMBL/GenBank/DDBJ databases.
SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
L; AY055750; AAL17640.1; -.
erPro; IPR002048; EF-hand.
erPro; IPR001839; TGFb.
erPro; IPR001111; TGFb N.
m; PF00019; TGF-beta; 1.
                                                                                  VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 109
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larity 98.2%;
Conservative
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57; TGFb; 1.
18; EF HAND; UNKNOWN
                                                                                                                                                                                                                                                                                               EF HAND; UNKNOWN
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98.2%;
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Pred. No. 6.5e-64;
1; Mismatches 1
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Pred. No. 6.5e-64;
1; Mismatches 1
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Best Loc
Matches
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Gu Z., Yang W., Cheng Z., Li H., Zhu D.;
"Molecular Cloning and Tissue Distribution of the 1
Duck, Goose, Pigeon and Quail.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ datal
EMBL; AF440863; AAL35277.1; -.

InterPro; IPR002048; EF-hand.
InterPro; IPR001839; TGFb.
InterPro; IPR001839; TGFb N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00019; TGF-beta; 1.
SMART; SM00204; TGFB; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00018; EF HAND; UNKNOWN 1.
PROSITE; PS000250; TGF BETA 1; UNKNOWN 1.
SEQUENCE 375 AA; 42739 MW; 88296F0AE779476E CR
                                                                                                                                                                       Q8UWD7;
Q8UWD7;
Q8UWD7;
Q1-MAR-2002 (TrEMBLre)
Q1-JUN-2002 (TrEMBLre)
Q1-JUN-2002 (TrEMBLre)
Q1-JUN-2002 (TrEMBLre)
Myostatin.
Myostatin.
MSTN.
Coturnix chinensis.
Coturnix chinensis.
Trikaryota; Metazoa; (
SEQUENCE FROM N.A.

Gu Z., Yang W., Cheng Z., Li H., Zhu D.;
"Molecular Cloning and Tissue Distribution of the Duck, Goose, Pigeon and Quail.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ da EMBL; AF440864; AAL35278.1; -.

InterPro; IPR002048; EF-hand.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb N.
Pfam; PF00019; TGF-beta; 1.

Pfam; PF00688; TGFb propeptide; 1.
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Q8UWD8;
01-MAR-2002
01-MAR-2002
01-JUN-2002
Myostatin.
MSTN.
                                                                                                                                                 Coturnix.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Columba livia (Domestic pigeon).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Columbiformes; Columbidae; Columba
NCBI_TaxID=8932;
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                                                                                                                                                _TaxID=46218;
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                                                                                                                                                                      ; Chordata; C
Neognathae;
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21,
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21,
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                                                                                                                                                                       Craniata; Vertebrata; Euteleostomi;
; Galliformes; Phasianidae; Phasianinae;
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RESULT 8
Q8UWD9
ID Q8UWD9
AC Q8UWD9;
DT 01-MAR-2002
DT 01-MAR-2002
DT 01-JUN-2002
                                                                                                                                                                                                                RESULT
Q98SP0
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Best Local S
Matches 107
                                                                                                                                                                       Query Match
Best Local Similarity
Matches 106; Conserv
                                                                                                                                                                                                                                                                        InterPro; IPR002048; EF-har
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb N
Pfam; PF00019; TGF-beta; I.
Pfam; PF00688; TGFb propept
                                                                                                                                                                                                                                                                                                                         development.";

Submitted (FEB-20
-!- SIMILARITY: B
EMBL; AF346599; A
HSSP; P18075; 1BM
                                                                                                                                                                                                                                               ProDom; Free
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q98SP0;
Q98SP0;
01-JUN-2001
01-JUN-2001
01-JUN-2002
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PROSITE;
PROSITE;
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Myostatin.
MSTN.
                                                                                                                                                                                                              ProDom; PD000357; TGFb; 1.

SMART; SM00204; TGFB; 1.

PROSITE; PS00018; EF HAND; UNKNOWN_1.

PROSITE; PS00250; TGF_BETA_1; 1.

Glycoprotein.

SEQUENCE 375 AA; 42717 MW; D980E2
                                                                                                                                                                                                                                                                                                                                                                                                                              Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                     Zhang
                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.

Thang Y., Yang W., Zhu D.;

Genomic structure and expression of the chicken GDF-8 during levelopment.";
                                                                                         327
                                                                                                                                267
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                                                                                        TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SM00204; TGFB; 1.

2; PS00018; EF HAND; UNKNOWN 1.

3; PS00250; TGF BETA 1; UNKNOWN

DE 375 AA; 42721 MW; B893B11
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                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (TrEMBLrel. 17, Created)
(TrEMBLrel. 17, Last sequence update)
(TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                               B-2001) to the EMBL/GenBank/DDBJ databases. Y: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                                                                                                                                                                             1BMP
                                                                                                                                                                                                                                                                 TGFb_propeptide; 1.
                                                                                                                                                                                                                                                                                     TGF-beta; 1
                                                                                                                                                                                                                                                                                                                                     AAK18000.1;
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                                                                                                                                                                                 97.3%;
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                                                                                                                                                                       1;
                                                                                                                                                                                 Score 613; DB 13;
Pred. No. 2.5e-63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 618; DB 13;
Pred. No. 6.5e-64;
1; Mismatches 1
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                                                                                                                                                                                                                 D980E286426E4D4F CRC64;
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B893B1IA42DE0725 CRC64;
                                                                                                                                                                         Mismatches
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PRELIMINARY;

PRT;

375 AA.

(TrEMBLrel. 20, (TrEMBLrel. 20, (TrEMBLrel. 21,

Created)
Last sequence update)
Last annotation updat

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Best Local S
Matches 108
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Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.

Gu Z., Yang W., Cheng Z., Li H., Zhu D.;
"Molecular Cloning and Tissue Distribution of the N
Duck, Goose, Pigeon and Quail.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ datal
EMBL; AF440862; AAL35276.1; -.
InterPro; IPR002048; EF-hand.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb.N.
Pfam; PF00688; TGF-beta; 1.
Pfam; PF00688; TGFb propeptide; 1.
SMART; SM00204; TGFB; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00018; EF HAND; UNKNOWN 1.
PROSITE; PS00018; EF HAND; UNKNOWN 1.
SEQUENCE 375 AA; 42667 MW; S7DDE49D3AA2978C CRO
                                                                                  Gu Z., Yang W., Cheng Z., Li H., Zhu D.;
"Molecular Cloning and Tissue Distribution of the Duck, Goose, Pigeon and Quail.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ da EMBL; AF440861; AAL35275.1; -.
InterPro; IPR002048; EF-hand.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb N.
Pfam; PF00019; TGF-beta; I.
Pfam; PF00688; TGFb propeptide; 1.
SMART; SM00204; TGFB; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00018; EF HAND; UNKNOWN 1.
SEQUENCE 375 AA; 42817 MW; 1BA7FF5225C23620
                                                                                                                                                                                                                                                                                                                                                               Q8UWE0;
Q8UWE0;
01-MAR-2002
01-MAR-2002
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                        Myostatin.
MSTN.
                                                                                                                                                                                                                                                                                                  Anas platyrhynchos (Domestic duck).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eu
Archosauria; Aves; Neognathae; Anseriformes; Anatidae;
                                                                                                                                                                                                                                                                SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Anser anser
Eukaryota; l
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NCBI_TaxID=8843;
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MSTN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               327
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                                                                                                                                                                                                                                                                                        TaxID=8839;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              106;
                                     cch 96.8%; 1 Similarity 97.2%; 106; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
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Metazoa; Chordata; (a; Aves; Neognathae;
                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
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97.2%;
                                                                                                                                                                                                                                                                                                                                                                20,
                                                                                  UNKNOWN 1.
NW; 1BA7FF5225C23620 CRC64;
                                                                                                                                                                                                                                                                                                                                                             Created)
Last sequence update)
Last annotation updat
                                     7.
                                                                                                                                                                                                                 EMBL/GenBank/DDBJ databases
                                   Score 610; DB 13; Pred. No. 5.6e-63; L; Mismatches 2;
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RESULT 10
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DT 01-DE
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DE MYOST
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OS Capra
OC Bovid
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DR EMBL;
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DR Pfam
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Q9MZ18
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Best Local
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"Cloning of intron 2 of the myostatin gene in goat.";
Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
EMBL; AY032689; AAK49790.1; -.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide; 1.
ProDom; PD000357; TGFb_propeptide; 1.
PROSITE; PS00250; TGF_BETA_1; UNKNOWN_1.
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01-OCT-2000
01-OCT-2000
01-JUN-2002
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NON_TER 1
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01-DEC-2001
01-DEC-2001
01-JUN-2002
Myostatin (F
                                                                                           Lian Z., "Cloning
                                                                                                                                                                                                                                                                                                                                                                                  MSTN
                                                                                                                                                                                                                                         Eukaryota; Metazoa
Mammalia; Eutheria
Bovidae; Caprinae;
                                                                                                                                                                                                                                                                                                                                                                                                                Myostatin (F
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                                       Submitted
                                                                                                                                                         SEQUENCE
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   SIMILARI
L; AF2667
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VHQANDRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                        TaxID=9
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Jin H., Li N.;
of intron 2 of the myostatin gene in sheep.";
d (MAY-2000) to the EMBL/GenBank/DDBJ databases.
LARITY: BELONGS TO THE TGF-BETA FAMILY.
266758; AAF78069.1; -.
                                                                                                                                                         FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             001 (TrEMBLrel. 19, 1)02 (TrEMBLrel. 21, 1)02 (Fragment).
                                                                                                                                                                                                                                                                                  Eutheria;
                                                                                                                                                                                                                                                                                                         (Sheep).
Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1
185
185 AA;
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                                                                                                                                                                                                                          940;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94.4%;
larity 95.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                              ragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
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                                                                                                                                                                                                                                                      Ovis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185
                                                                                                                                                                                                                                                                             Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
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15,
21,
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Last sequence update)
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Pred. No. 1.5e-61;
3; Mismatches 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
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RESULT 13
Q90W05
ID Q90W0
AC Q90W0
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Best Local S
Matches 101
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Best Loc
Matches
                                                                                                                                                                                                           SEQUENCE FROM N.A.

KOCabas A.M., Liu Z.J.;

"Molecular characterization and expression of the "Molecular characterization and expression of the channel catfish (Ictalurus punctatus).";

Submitted (JUL-2001) to the EMBL/GenBank/DDBJ dat -!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.

EMBL; AF396747; AAK84666.1; -.

InterPro; IPR001839; TGFb.

InterPro; IPR001839; TGFb N.

Pfam; PF00019; TGF-beta; 1.

Pfam; PF00688; TGFF_bropeptide; 1.

PROSITE; PS00250; TGF_BETA_1; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                  Q90YY0;
Q90YY0;
Q90YY0;
Q1-DEC-2001 (TrEMBLrel. 19, Created)
O1-DEC-2001 (TrEMBLrel. 19, Last sequence
O1-JUN-2002 (TrEMBLrel. 21, Last annotatic
Myostatin.
Ictalurus punctatus (Channel catfish).
Eukaryota; Metazoa; Chordata; Craniata; Ve
Actinopterygii; Neopterygii; Teleostei; Os
Ictaluridae; Ictalurus.
NCBI_TaxID=7998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HSSP; P12643; 3BMP.
InterPro; IPR001839; TGFb.N.
InterPro; IPR001111; TGFb.N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide; 1.
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1; 1.
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Glycoprotein.
NON TER
NON TER 18
SEQUENCE 185
                                                                                                                                                                                           PROSITE; PS00:
Glycoprotein.
SEQUENCE 38:
Q90W05;
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                                                                                                     GLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHLVH 62
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCG
                                                              101;
                                                                                                                                                    95
                                                                                                                                               1 88.7%;
Similarity 88.8%;
95; Conservative
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Similarity 94.4%;
)1; Conservative
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185 AA;
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          PRELIMINARY;
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20923 MW;
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3; Mismatches
                                                                                                                                               Score 559; DB 13;
Pred. No. 5.2e-57;
P; Mismatches 3;
           PRT;
                                                                                                                                                                                         569FB9S2B7E9E173 CRC64;
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          581
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Ostariophysi; Siluriformes;
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                                                                                                                                                                   Length
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Best Local &
Matches 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (APR-2000) to the -!- SIMILARITY: BELONGS TO EMBL; AF258448; AAK53545.1; EMBL; AF258447; AAK53544.1; InterPro; IPR001839; TGFb. InterPro; IPR001111; TGFb N Pfam; PF00019; TGF-beta; 1. Pfam; PF00688; TGFb propent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProDom; PD000357; To PROSITE; PS00250; To Glycoprotein. SEQUENCE 385 AA;
                                                            SEQUENCE FROM Ostbye T.K., G Andersen O.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patarnello T.;
"Characterizat
Sparus aurata:
Submitted (APR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Actinopterygii; Ne
Acanthomorpha; Aca
Sparidae; Sparus.
NCBI_TaxID=8175;
                                                                                                                                                      SEQUENCE F
Andersen C
Submitted
 expressed Submitted
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Q9DDI8;
Q9DDI8;
Q9DDI8;
Q1-MAR-2001 (TrEMBLrel. 16, Created)
Q9DDI8;
Q9DDI8;
Q9DDI8;
Q9DDI8;
Q9DDI8;
Q9DDI8;
Q9DDI8;
Q9DDI8;
Q1-MAR-2001 (TrEMBLrel. 16, Created)
Q1-OCT-2001 (TrEMBLrel. 18, Last sequence update)
Q1-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Q9DDI8;
Q1-JUN-2001 (TrEMBLrel. 16, Created)
Q1-MAR-2001 (TrEMBLrel. 16, Created)
Q9DDI8;
Q1-JUN-2001 (TrEMBLrel. 16, Created)
Q1-MAR-2001 (TrEMBLrel. 16, Created)
Q1-JUN-2001 (TrEMBLrel. 16, Last sequence update)
Q1-JUN-2001 (TrEMBLrel. 16, Last sequence update)
Q1-JUN-2001 (TrEMBLrel. 16, Last sequence update)
Q1-JUN-2002 (TrEMB
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01-DEC-2001
01-JUN-2002
                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
Ostbye T.K., Galloway T.F., Nielsen C., Gabestad I., Bard.
"The two myostatin genes of Atlantic salmon (Salmo salar)
expressed in a variety of tissues.";
Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sparus aurata
Eukaryota, Me
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                                              "The two
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96;
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 myostatin genes of Atlantic salmon (Salmo salar)
i in a variety of tissues.";
d (AUG-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                      FROM N.A.
O.;
1 (AUG-2001) to the EMBL/GenBank/DDBJ databases
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tazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
li; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
l; Acanthopterygii; Percomorpha; Perciformes; Percoidei;
                                                                                    Galloway T.F., Nielsen C., Gabestad I., Bardal T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tion of the myostatin gene in the gilthead seabream, sequence, genomic structure, and expression pattern."; R-2000) to the EMBL/GenBank/DDBJ databases.

Y: BELONGS TO THE TGF-BETA FAMILY.

8; AAK53545.1; -.

7; AAK53544.1; -.
                                                                                                               N.A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGF_BETA_1; UNKNOWN_1.
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TGFb; 1.
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88.1%; Pred. No. 1.1e-56;
cive 7; Mismatches 6;
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Last annotation update)
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                                                                                                                                                                                                                                                                                                               Bardal T.;
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RESULT 15
Q90ZD2
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   Search completed:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rescan P.-Y., Jutel I., Ralliere C.;
Rescan P.-Y., Jutel I., Rescan P.;
I. Exp. Biol. 0:0-0(2001).
I. Exp. Biol. 0:0-0(2001).
Rescan P. Biol. 0:0-0(2001).
Rescan P. BETA FAMILY.
Rescan P.-Y., Jutel I., Ralliere C.;
Rescan P.-Y., Jute
                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
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Best Local
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EMBL; AJ297267; CAC19541.2; ...

EMBL; AJ316006; CAC59700.1; ...

HSSP; P12643; 3BMP.

InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb.N.

Pfam; PF00019; TGF-beta; I.

Pfam; PF00688; TGFb propeptide; 1.

SMART; SM00204; TGFB; 1.

PROSITE; PS00250; TGF BETA_1; 1.

Glycoprotein; Signal.

SIGNAL 1 22 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q90ZD2;
Q90ZD2;
Q90ZD2;
Q90ZD2;
Q1-DEC-2001 (TrEMBLrel. 19, Created)
Q1-DEC-2001 (TrEMBLrel. 19, Last sequence update)
Q1-DEC-2002 (TrEMBLrel. 21, Last annotation update)
Q1-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Myostatin 1.
Qncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
Qncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
Qucorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
Qucorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
Qucorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
Q1-DEC-2001 (TrEMBLrel. 19, Created)
Q1-DEC-2001 (TrEMB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
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325
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                                                                                                                                                                                                                   DSGLDCDENSPESRCCRYPLTVDFEDFGWDWIIAPKRYKANYCSGECEYMHLQKYPHTHL 324
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his SWISS-PROT entry is copyright. I etween the Swiss Institute of Bioin	-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.	BREEDS. THIS DISEASE IS OF MUSCLE FIBERS (HYPERP	PHENOTYPE OR MUSCULAR HYPERTROPHY (MH), AN DISEASE FREQUENTLY FOUND IN THE BELGIAN BL	DAY 31 UP UNTIL LATE GESTATION. -!- DISEASE: DEFECTS IN GDF8 ARE THE CAUSE OF THE DOUBLE-MUSCLE	LEVELS ARE FOUND UP TO DAY 29 EMBR	HINDLIMB MUSCLES.	M.SEMIMEMBRANOSUS AND M.BICEPS FEMORIS; LOW LEVELS IN OTHER	!- TISUE SPECIFICITY: SPECIFICALLY	OWTH.	-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SKELETAL	e.";	c organization and neonatal expres	337; PubMed=11451380;		SCT. 0.0.0. 24.1643/-16401("Double muscling in cattle due to mutations in the myostatin gene.";	ee SJ.;	PubMed=9356471;	SEQUENCE FROM N.A., AND VARIANTS MH LEO-94 AND TIX-313. STRAIN=Holstein: TISSUE-Skeletal muscle:		Genome Res. 7:910-916(1997).	e cattle.";	"Muitations in myostatin (CDFS) in double muscled beloian Blue and	PubMed=9314496;	TISSUE=Muscle, and Embry	AND VARIANT MH TVR-313	H	Bovinae; Bos.	Eukaryota; Metazoa; Chordata; Crantata; Vertebrata; Eutereostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;	(Bovine).	GDF8 OR MSTN OR MH.	2 (Rel. 41, Last annotation update)	JUN-2002 (Rel. 41, Last sequence update)	018836; 018829; Q95N97; 15-JUL-1998 (Rel. 36, Created)	VIN STANDA	BOVIN

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15-JUL-1999 (Rel. 38, Last sequence update)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Growth/differentiation factor 8 precursor (GD
GDF8 OR MSTN.
Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Verte
Archosauria; Aves; Neognathae; Galliformes; P
Gallus.
NCBI_TaxID=9031;
[1]
SEQUENCE FROM N.A.
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InterPro; IPR001839; TGFb.
InterPro; IPR0011111; TGFb.N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb propeption
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1;
Growth factor; Cytokine; Glyc
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                      This
                                                                                         STRAIN=White leghorn; TISSUE=Skeletal muscle;
MEDLINE=98024153; PubMed=9356471;
McPherron A.C., Lee S.-J.;
"Double muscling in cattle due to mutations in the myostatin Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).
-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SK MUSCLE GROWTH.
    between
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                                                         SUBUNIT: HOMODIMER; SIMILARITY: BELONGS
   SWISS-PROT entry is copyright.
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AF019620; AAB86687.1;
AF320998; AAG48116.1;
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TGFb; 1.
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                                                           DISULFIDE-LINKED (BY SIMILARITY)
TO THE TGF-BETA FAMILY.
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GROWTH/DIFFERENTIATION
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Pred. No. 5.3e-63;
Mismatches 0;
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    thi. It is produced Bioinformatics and
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Phasianidae; Phasianinae
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SEQUENCE FROM
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TISSUE=Skelet
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MCPherron A.C
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GDF8 OR MSTN
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Growth factor;
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Mammalia; Eut
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SMART; SM002
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IPR001111;
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(Rel. 38, Last sequence update)
(Rel. 41, Last annotation update)
erentiation factor 8 precursor (GDF-8) (Myostatin).
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.C., Lee S.-J.;
cling in cattle due to mutations in the myostatin
Acad. Sci. U.S.A. 94:12457-12461(1997).
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50; TGF_BETA
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DA732DB9426E4D4F CRC64;
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GROWTH/DIFFERENTIATION FACTOR
BY SIMILARITY.
BY SIMILARITY.
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No. 1.2e-61;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA.
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EMBL; AF019627; AAB86694.1; -.

EMBL; AF019627; AAB86694.1; -.

EMBL; AF104922; AAC96327.1; -.

EMBL; 
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Best Local S
Matches 107
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Growth factor;
SIGNAL 1
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DISULFID
CARBOHYD
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G42221;

G42221;

G042221;

G0-MAY-2000 (Rel. 39, Created)

G0-MAY-2001 (Rel. 39, Last sequence update)

16-OCT-2001 (Rel. 40, Last annotation update)

Growth/differentiation factor 8 precursor (GDF-8) (Myostatin).

GDF8 OR MSTN.

Meleagris gallopavo (Common turkey).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Archosauria; Aves; Neognathae; Galliformes; Meleagrididae; Meleagris.

NCBI_TaxID=9103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MELGA
                                                                                                                        TISSUE=Skeletal muscle;

MEDLINE=98024153; PubMed=9356471;

MCPherron A.C., Lee S.-J.;

"Double muscling in cattle due to mutations in the myostati
Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).

-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF

MUSCLE GROWTH.

-!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).

-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                               [1]
SEQUENCE FROM N.A.
TISSUE=Skeletal mu
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Similarity 98.2%;
07; Conservative
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POTENTIAL.
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BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POTENTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۲,
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                                                                                                                                                                                                                                                                                             myostatin gene.";
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RESULT 5
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HSSP; P18075; 1BMP.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb_N.
Inte
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Best Local
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TISSUE=Muscle;
Daneau I., Silverside
Submitted (SEP-1998)
-!- FUNCTION: ACTS SP
MUSCLE GROWTH.
                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
TISSUE=Skeletal mus
MEDLINE=98024153; 1
McPherron A.C., Les
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DISULFID
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SEQUENCE
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Eukaryota; Met
Mammalia; Euth
NCBI_TaxID=982
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         O18831;
15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Growth/differentiation factor 8 precursor (GDF-8) (Myostatin).
GDF8 OR MSTN.
                                                                                                                                           [2]
SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
STRAIN=Duroc, Hampshire, Meishan, and Yorkshire;
TISSUE=Skeletal muscle;
Voelker G.R., Conroy J.C., Wheeler M.B.;
"Porcine myostatin cDNA sequences: Duroc, Hampshire, Mei
Yorkshire pigs.";
Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                  MEDLINE=98024153; PubMed=9356471;
McPherron A.C., Lee S.-J.;
"Double muscling in cattle due to mutations in the myostatin gene.";
Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).
                                                                                                         SEQUENCE
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ilarity 98.2%;
Conservative
                                                                                                        1-10 AND 36-375 FROM N.A.
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                lversides D.W.;
P-1998) to the EMBL/GenBank/DDBJ
ACTS SPECIFICALLY AS A NEGATIVE
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                                                                                                                                                                                                                                                                                                                                                                                                         muscle;
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BY SIMILARITY.

INTERCHAIN (BY SIMILARITY).

N-LINKED (GLCNAC. ) (DOT
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GROWTH/DIFFERENTIATION FACTOR 8.
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                        databases.
REGULATOR OF
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                         SKELETAL
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RESULT
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Best Local
 SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
STRAIN=CD-1; TISSUE=Skeletal muscle;
MEDLINE=97284412; PubMed=9139826;
McPherron A.C., Lawler A.M., Lee S.-J.
"Regulation of skeletal muscle mass in superfamily member.";
Nature 387:83-90(1997).
-!- FUNCTION: ACTS SPECIFICALLY AS A N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AF019623; AAB86690.1; -.
EMBL; AF188635; AAF02770.1; -.
EMBL; AF188636; AAF02771.1; -.
EMBL; AF188637; AAF02772.1; -.
EMBL; AF188638; AAF02773.1; -.
EMBL; AF033855; AAC08035.1; -.
EMBL; AF093798; AAC62489.1; -.
HSSP; P18075; 1BMP.
InterPro; IPR001839; TGFb N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00088; TGFb propeptide; 1
ProDom; PD000357; TGFB; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF BETA 1; 1.
                                                                                                                                                                                     GDF8 MOUSE STANDARD;

O08689;

O1-NOV-1997 (Rel. 35, Cr

O1-NOV-1997 (Rel. 35, La

16-OCT-2001 (Rel. 40, La

Growth/differentiation f
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SEQUENCE
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                                                                                                              NCBI
                                                                                                                        GDF8 OR MSTN.
Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                               HOUSE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               European Bioinformat
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                                                                                                                                                                                                                                                                                                                                                                                                                ch 98.1%; 98.2%; 107; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               factor;
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                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entry is copyright. It is produced through a collaboration iss Institute of Bioinformatics and the EMBL outstation - binformatics Institute. There are no restrictions on its offit institutions as long as its content is in no way is statement is not removed. Usage by and for commercial a license agreement (See http://www.isb-sib.ch/announce/
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Last sequence
Last annotati
on factor 8 pre
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                                                                                                                                                                                                              sequence
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GROWTH/DIFFERENTIATION FACTOR 8
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POTENTI
N-658685EFDA3418 CRC64;
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                                                           Lee S.-J.;
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                                                                                                                                     Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                     cation update)
precursor (GDF-
                                                                                                                                                                                                                                                                                                                                                                                                                ore 618; DB 1;
ed. No. 1.2e-61;
Mismatches 1
           Þ
                                                                                                                                                                                                              update)
                                                'n
            NEGATIVE
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                                                mice
                                                Λq
            REGULATOR
                                                                                                                                                                                       8)
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                                                new
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                                                                                                                                                                                      (Myostatin)
                                                                                                                                                Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL)
                                                                                                                                     Murinae;
                                                TGF-bet
            읁
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           SKELETAL
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                                                                                                                                      Mus.
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Best Loc
Matches
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SMART; SM00204; TG1
                                                                                                                                                                                                                                                                                GDF8 RAT
035312;
15-JUL-1999
15-JUL-1999
16-OCT-2001
Growth/differ
GDF8 OR MSTN
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InterPro; IPR00:
Pfam; PF00019; T
Pfam; PF00688; T
Proc. Nuc.
                                                                                                    [1]
SEQUENCE FRO
TISSUE=Skele
MEDLINE=9802
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DISULFID
DISULFID
DISULFID
CARBOHYD
SEQUENCE
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GDF8
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SIGNAL
PROPEP
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HSSP;
MGD; N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                               NCBI
                                                                                                                                                                                                                 Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chor
Mammalia; Eutheria; Rode
                                                                                 McPherron
                                                         "Double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             268
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b; P18075; 1BMF.

c; P18075; 1BMF.

d; MGI:95691; Gdf8.

iterPro; IPR001839; TGFb.

rerPro; IPR001111; TGFb_N.

reno019; TGF-beta; 1.

response propeptide; 1

response in the propertion of the properties of the p
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TISSUE SPECIFICITY: EXPRESSED SPECIFICALLY IN DEVELOPING AND ADULT
SKELETAL MUSCLE. WEAK EXPRESSION IN ADIPOSE TISSUE.
DEVELOPMENTAL STAGE: FIRST DETECTED AT DAY 9.5 POST-COITUM IN
ONE-THIRD OF DEVELOPING SOMITES. AT DAY 10.5, EXPRESSED IN THE
MYOTOME COMPARTMENT OF SOMITES. AT LATER STAGES OF DEVELOPMENT,
DETECTED IN A WIDE RANGE OF DEVELOPING MUSCLES. EXPRESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARI
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                                  le muso
Natl.
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                                                                                                                                                                                                                  Metazoa; Chordata;
utheria; Rodentia;
                                                                                                                                                                                                                                                                                                      (Rel. 38, Created)
(Rel. 38, Last sequence update)
(Rel. 40, Last annotation update)
erentiation factor 8 precursor (GDF-8) (Myostatin)
              .C., Lee S.-J.;
cling in cattle due to mutations in the myostatin gene."
Acad. Sci. U.S.A. 94:12457-12461(1997).
N: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SKELETAL
                                                                                                    etal muscle;
24153; PubMed=9356471;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           376
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340
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                0116;
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                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
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267
376
341
373
375
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98.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 618; DB 1;
Pred. No. 1.2e-61;
L; Mismatches 1
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GROWTH/DIFFERENTIATION FACTOR
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
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                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3E19814DD62C08BE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                              376
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RESULT 8
GDF8_PAPH
ID GDF8
AC 0188
AC 0188
DT 15-J
DT 16-C
DE Grow
GN GDF8
OC Cerc
OX NCB1
RN [1]
RN [1]
RP SEQU
RC TISS
RX MEDI
RA MCPH
RT "DOU
RC -!-
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CC This
CC This
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P SEQUENCE FROM N.A.

P SEQUENCE FROM N.A.

P SEQUENCE FROM N.A.

C TISSUE=Skeletal muscle;

X MEDLINE=98024153; PubMed=9356471;

X McPherron A.C., Lee S.-J.;

X McPherron A.C., Lee S.-J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local &
Matches 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00688,
Pfam; PF00688,
ProDom; PD000357; TGFE,
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF BETA 1
PROSITE; PS00250; TGF BETA 1
24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AF019624; AAB86691.1; -. HSSP; P18075; 1BMP.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb propeptide; 1
ProDom; PD000357; TGFb; 1.
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DISULFID
DISULFID
CARBOHYD
SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                               O18828;
O18828;
15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Growth/differentiation factor 8 precursor (GDF-8) (Myostatin)
GDF8 OR MSTN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PAPHA
                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                       Papio hamadryas (Hamadryas baboon).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
Cercopithecinae; Papio.
NCBI_TaxID~9557;
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SUBUNIT: HOMODIMER;
SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
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344
720
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Glycoprotein; Signal POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.

GROWTH/DIFFERENTIATION FACTOR 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          933043D8C8C3294B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 375
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1.2e-61;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109
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RESULT
GDF8_SI
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Best Local S
Matches 106
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O18830;
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HSSP; P18075; 1BMP.
InterPro; IPR001839; I
InterPro; IPR001111; I
Pfam; PF00019; TGF-bet
Pfam; PF00688; TGFb pr
                                                                                                                                                                                                                                                                                                                                                                                                                                  Ovis aries (Sheep).
Eukaryota; Metazoa; (Mammalia; Eutheria; (Bovidae; Caprinae; Ov
               modified and entities requor send an am
                                                                                        This SWISS-PROT (between the Switthe European Bio)
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SMART; SM00204; TG:
PROSITE; PS00250;
Growth factor; Cyto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            modified and tentities remo
                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM
TISSUE=Skeleta
MEDLINE=980241
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DISULFID
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DISULFID
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Growth
SIGNAL
PROPEP
CHAIN
                                                                                                                                                                        MEDLINE=98024153; PubMed=9356471;

McPherron A.C., Lee S.-J.;

"Double muscling in cattle due to mutations in the myostatin gene.";

Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).

-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SKELETAL

MUSCLE GROWTH.

-!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).

-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GDF8 OR MSTN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-JUL-1999 (Rel. 38, C
15-JUL-1999 (Rel. 38, I
16-OCT-2001 (Rel. 40, I
Growth/differentiation
                                                                               use
                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=99
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SHEEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity 97.;
)6; Conservative
            SS-PROT entry is copyright. It is produced through a collaboration the Swiss Institute of Bioinformatics and the EMBL outstation - pean Bioinformatics Institute. There are no restrictions on its non-profit institutions as long as its content is in no way and this statement is not removed. Usage by and for commercial requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ĀΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cytokine; Glycoprotein; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                     muscle;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB86686.1; -.
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38, Last sequence update)
40, Last annotation update)
ation factor 8 precursor (GD
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372
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339
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42688 MW;
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BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY
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Best I
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HSSP; P18075; 1BMP.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb
Pfam; PF00019; TGF-beta; I
Pfam; PF00688; TGFb propep
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF BETA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
DISULFID
DISULFID
DISULFID
CARBOHYD
CARBOHYD
SEQUENCE OF 75-405 FROM N.A.
MEDLINE=99173787; PubMed=10072786;
Nakashima M., Toyono T., Akamine A., Joyner A.;
"Expression of growth/differentiation factor 11
BMP/TGFbeta superfamily during mouse embryogene
Mech. Dev. 80:185-189(1999).
-!- FUNCTION: SECRETED SIGNAL THAT ACTS GLOBALI
IDENTITY ALONG THE ANTERIOR/POSTERIOR AXIS
                                                                                           STRAIN=129/SvJ;
MEDLINE=99318097; PubMed=10391213;
MCPherron A.C., Lawler A.M., Lee S.-J.;
"Regulation of anterior/posterior patterning growth/differentiation factor 11.";
Nat. Genet. 22:260-264(1999).
                                                                                                                                                                         Rosen V.;
"A novel BMP expressed in developing mouse limb, spibud is a potent mesoderm inducer in Xenopus embryos Dev. Biol. 208:222-232(1999).
                                                                                                                                                                                                     [1]
SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE=99177155; PubMed=10075854;
Gamer L.W., Wolfman N.M., Celeste A.J.,
                                                                                                                                                                                                                                                                                                                            GDFB_MOUSE STANDARD; PRT; 405 AA.
Q9Z1W4; Q9QX55; Q9R221;
16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
16-OCT-2001 (Rel. 40, Last annotation update)
Growth/differentiation factor 11 precursor (B
                                                                                                                                                                                                                                                                                                                                                                                                      MOUSE
                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                       Mus musculus
                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                 GDF11 OR BMP11
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    104;
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ilarity 95.4%;
Conservative
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339
71
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.

GROWTH/DIFFERENTIATION FACTOR 8
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
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Pred. No. 1.5e-60;
}; Mismatches 2;
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N-LINKED (GLCNAC. . .) (POTENTIAL)
N-LINKED (GLCNAC. . .) (POTENTIAL)
1C36F3833BB11241 CRC64;
                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Sciurognathi; Muridae;
                              embryogenesis.";
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             GLOBALLY TO
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   DURING
                                                                                                                      the
                                                                                                                                                                                              spinal
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                                                                                                                                                                                                                                                                                                                                       morphogenetic
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; Murinae; Mus
                                                                                                                     axial
            SPECIFY
   DEVELOPMENT.
                                             member
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                                                                                                                                                                                                                              Hewick
                                                                                                                                                                                                        cord,
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             POSITIONAL
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RESULT GDFB_HU ID GD AC 09 DT 16

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GDFB HUMAN S
095390; Q9UID1;
16-OCT-2001 (Rel

D1; Q9UID2;

Created)

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Best Local
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PROSITE; PS00250
----wth factor;
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                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AF02833
EMBL; AF09273
HSSP; P18075;
MGD; MGI:1338
                                                                                                                                                 DISULFID
DISULFID
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CARBOHYD
CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                 CHAIN
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SIGNAL
PROPEP
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EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF BETA 1; 1.
Growth factor; Cytokine; Glycoprotein; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF0001
Pfam; PF0068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>-</u>
357
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEVELOPMENTAL STAGE: FIRST STRONGLY EXPRESSED IN RESTRICTED DOMAINS AT 8.5 DAYS POST COITUS (DPC) WHERE IT IS HIGHEST IN THE TAIL BUD. AT 10.5 DPC, EXPRESSED IN THE BRANCHIAL ARCHES, LIMB BUD, TAIL BUD AND POSTERIOR DORSAL NEURAL TUBE. LATER, EXPRESSED IN TERMINALLY-DIFFERENTIATED ODONTOBLASTS, THE NASAL EPITHELIUM, RETINA AND SPECIFIC REGIONS OF THE BRAIN.

SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PLAY CRITICAL ROLES IN PATTERNING BOTH MESODERMAL AND NEURAL TISSUES AND IN ESTABLISHING THE SKELETAL PATTERN.
SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
SUBCELLULAR LOCATION: Secreted (Probable).
TISSUE SPECIFICITY: HIGHLY EXPRESSED IN THE DEVELOPING LIMB BUD, INITIALLY DETECTED IN THE DISTAL MESENCHYME, AND LATER LOCALIZING TO REGIONS AROUND THE DEVELOPING BONES. IS ALSO EXPRESSED IN ADULT DENTAL PULP AND BRAIN.
              VHOANPRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AF100906;
AF100905;
AF100905;
AF028337;
AF028335;
AF028336;
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VQQANPR
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and this statement is not remo
requires a license agreement (
an email to license@isb-sib.ch)
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297
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208
311
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343
343
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92
75
171
171
171
A05 AA;
                                                DEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
GSAGPCCTPTKMSPINMLYFNDKQQIIYGKIPGMVVDRCGCS 405
             GSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 109
                                                                                                    Conservative
                                                                                                              larity
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AAC72853.1;
AAC72853.1;
AAF21633.1;
AAF21633.1;
AAF21633.1;
AAD05267.1;
                                                                                                                                                                                                                                                                                                                                                        TGFb propeptide; 7; TGFb; 1.
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                                                                                                           Score 573; DB 1;
Pred. No. 1.3e-56;
                                                                                                                                                                BY SIMILARITY.
INTERCHAIN (BY SIMILARITY)
N-LINKED (GLCNAC. . .) (PO
E -> G (IN REF. 3).
T -> N (IN REF. 2).
                                                                                                                                                                                                                                                     POTENTIAL.

BY SIMILARITY.

GROWTH/DIFFERENTIATION FACTOR 11.

POLY-ALA.

POLY-GLY.
                                                                                                                                                                                                                              BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                      E -> G (IN REF. 3).
T -> N (IN REF. 2).
A74E382710A14781 CRC64
                                                                                                   d. No. 1.3
Mismatches
                                                                                                                           Length 405;
                                                                                                                                                      CRC64;
                                                                                                    Indels
                                                                                                                                                                                         (POTENTIAL).
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SETTITITITE REPRESENTATION OF THE PROCESS OF THE PR
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                                                           Query Match
Best Local S
Matches 97
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McPherron A.C., Lawler A.M., Lee S.-J.;
"Regulation of anterior/posterior patterning of the axial signathing the second of the axial signathing that acts globally to specify nat. Genet. 22:260-264(1999).

-!- FUNCTION: SECRETED SIGNAL THAT ACTS GLOBALLY TO SPECIFY IDENTITY ALONG THE ANTERIOR/POSTERIOR AXIS DURING DEVEL PLAY CRITICAL ROLES IN PATTERNING BOTH MESODERMAL AND NOTICE AND IN ESTABLISHING THE SKELETAL PATTERN.

-!- SUBCELLULAR LOCATION: Secreted (Probable).

-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-OCT-2001 (Rel. 40, Lands 15-JUN-2002 (Rel. 41, Lands Growth/differentiation 11).
                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00688; TGFb_pr
ProDom; PD000357; TGFb
SMART; SM00204; TGFB;
PROSITE; PS00250; TGF
Growth factor; Cytokin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gamer L. Rosen V.
                                                                                                                                          DOMAIN
DISULFID
DISULFID
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CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                           Growth
SIGNAL
PROPEP
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MIM; 6
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EMBL;
HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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TISSUE=Fetal brain;
MEDLINE=99177155; PubMed=10075854;
Gamer L.W., Wolfman N.M., Celeste A.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. MEDLINE=99318097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GDF11
                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb.
Pfam; PF00019; TGF-beta; 1
Pfam; PF00688; TGFb_propep
                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               novel BMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ).
18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     wel BMP expressed in developing mouses a potent mesoderm inducer in Xenopus Biol. 208:222-232(1999).
    DFGLDCDEHSTES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      603936;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OR BMP11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF100907; AAC72852.1;
AF028333; AAF21630.1;
AF028334; AAF21631.1;
P18075; 1BMP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HGNC: 4216; GDF11.
                                                          Simi
407
                                                          91.0%;
ilarity 89.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Human).
(etazoa; Chordata; (
                                                                                                                                                                                    299
299
210
213
313
341
345
                                                                                                                                                                                                                                   14; TGFB; 1.
0250; TGF_BETA_1; 1.
0250; TGF_BETA_1; 1.
1; Cytokine; Glycoprotein; 519...
1 24 POTENTIAL.
298 BY SIMILARITY.
298 GROWTH/DIFFERENTIATION FACTOR 11
                                                                                                                                              AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                  TGFb; 1.
                                                                                                                                                                                     24
298
407
41
215
215
372
404
406
371
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Last annotation update)
n factor 11 precursor (B
                                                                                                                                              ME;
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                                                                                                                                                                         POLY-ALA.

POLY-GLY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

INTERCHAIN (BY SIMILARITY).
                                                          Score 573; DB 1;
Pred. No. 1.3e-56;
7; Mismatches 5
                                                                                                                                                                   N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Vo
Catarrhini;
                                                                                                                                             LINKED (GLCNAC.
E8FF48E363635BA8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Xenopus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vertebrata; E; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hattersley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                limb,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Bone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            limb, spinal cord,
embryos.";
                                                                                                                                              CRC64;
                                                                                                   Length 407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    morphogenetic
                                                               Indels
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                                                          Gaps
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Best Loc
Matches
                                                                                                                                                                                                                                                                          EMBL; AF019626; AAB86693.1; -. HSSP; P18075; 1BMP.
ZFIN; ZDB-GENE-990415-165; gdf8.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O42222;
30-MAY-2000 (
30-MAY-2000 (
15-JUN-2002 (
Growth/differ
GDF8 OR MSTN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Proc. Natl. Acad.
-!- FUNCTION: ACTS
MUSCLE GROWTH.
-!- SUBUNIT: HOMOD
-!- SIMILARITY: BE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          McPherron A.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE=Skelet
MEDLINE=98024
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Actinopterygi
Cyprinidae; D
NCBI_TaxID=79
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                                                                                                                                DISULFID CARBOHYD CARBOHYD
                                                                                                                                                                DISULFID DISULFID DISULFID
                                                                                                                                                                                                         ProDom; PDUUU55.,
SMART; SM00204; TGFB; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1; 1.
PROSITE; PS00250; TGF_BETA_1; 1.
PROSITE; PS00250; TGF_BETA_1; 1.
POTENTIAL.
POTENTIAL.
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VHQANPR(
|::|:||
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                                   DSGLDCD
                                                       DEGLDCD
                                                                            94;
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keletal mu
                                                                                                                                                                                                                                                                                                                                                        non-profit institute. There are no restrictions on its and this statement is not removed. Usage by and for commercial requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
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266
280
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308
312
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312
32
72
274
AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Rel. (Rel. (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4153; PubMed=9356471;
C., Lee S.-J.;
Cing in cattle due to mutations in the myostatin gene.";
Acad. Sci. U.S.A. 94:12457-12461(1997).
RETS SPECIFICALLY AS A NEGATIVE REGULATOR OF SKELETAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       lii; Ne
Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 109
GSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS
                                   EHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                       HOMODIMER; DISULFIDE-LINKED (BY SI
TY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              955;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Rel. 39, Last sequence update)
(Rel. 41, Last annotation update)
rentiation factor 8 precursor (GDF-8) (Myostatin).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EHSSESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGQCEYMFMQKYPHTHL
                                                                                        larity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rerio (Zebrafish) (Danio rerio).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tazoa; Chordata; Craniata; Vertebrata; Euteleostomi; i; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                       entry is copyright. It is produced through a collaboration serieute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            muscle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      39,
                                                                                                                                                                                                                                                                b propeptide;
TGFb; 1.
                                                                                                                                  72
274
                                                                                                                                                       265
374
339
371
371
373
                                                                                                                        42060 MW;
                                                                                      88.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
                                                                             12;
                                                                            Score 559; DB Pred. No. 4.5e
                                                                                                                                                                POTENTIAL.
GROWTH/DIFFERENTIATION FACTOR
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                 INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
                                                                                                                         6302BC6C86562576 CRC64;
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                                                                                       4.5e-55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (BY SIMILARITY)
                                                                                                  Length 374;
               109
                                                                             <u>.</u>
                                                                             Gaps
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326

VNKAS PRGTAGPCCTPTKMS PINMLY FNGKEQIIYGKIPSMVVDRCGCS

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RESULT
GDFB_RA
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                                                                                                                                       Query Match
Best Local
Matches
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Eukaryota; Metazoa; Chordata; C
Mammalia; Eutheria; Rodentia; S
NCBI_TaxID=10116;
[1]
SEQUENCE FROM N.A.
TISSUE=Dental pulp;
MEDLINE=99173787; PubMed=100727
Nakashima M., Toyono T., Akamin
                                                                                                                                                                                                                                                                                                                                                         EMBL; AF092733; AAD05266.1; -.
HSSP; P18075; 1BMP.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb propeptide; 1
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF BETA 1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B_RAT

GDFB_RAT

G9Z217;

16-OCT-2001 (Rel. 40, Cr

16-OCT-2001 (Rel. 40, La

16-OCT-2001 (Rel. 40, La

16-OCT-2001 (Rel. 40, La

Growth/differentiation f
                                                                                                                                                                                                                                                                                                                                                ProDom; PDV000
SMART; SM00204; TG
SMO250; PS00250;
                                                                                                                                                                                                                                                                                                                               PROSITE; Pactor;
                                                                                                                                                                                                                                  DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                                    NON TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Expression of growth/differentiation BMP/TGFbeta superfamily during mouse & Mech. Dev. 80:185-189(1999).
                                                                                                                                                                                                                                                                                                                  NON TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11) (Fragment)
GDF11 OR BMP11
                                             61
                                                                              43
                  03
                                                                                                                                                                        Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FUNCTION: SECRETED SIGNAL THAT ACTS GLOBALLY TO SPECI IDENTITY ALONG THE ANTERIOR/POSTERIOR AXIS DURING DEV PLAY CRITICAL ROLES IN PATTERNING BOTH MESODERMAL AND TISSUES AND IN ESTABLISHING THE SKELETAL PATTERN (BY SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY). SUBCELLULAR LOCATION: Secreted (Probable).
              NLGLDCDEHS
                                                                                               DFGLDCDEHSTESRC: | | | | | | | | | | |
                                                                                                                                         90
                                                                                                                                       Similarity 87.
10; Conservative
                                                                                                                                                                                                   243
243
154
257
315
345
345
345
                                                                                                                                           242
>345
>345
7 316
315
345
345
39094 MW;
83.5%;
87.4°
                                                                                                                                                                                                                                                                                                                                               Cytokine;
                                                                             SES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                          RCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
n factor 11 precursor (Bone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                            Glycoprotein.
                                                                                                                                     7;
                                                                                                                                                                                                                                  POLY-GLY.
BY SIMILARITY.
INTERCHAIN (BY S
N-LINKED (GLCNA)
                                                                                                                                                      Score
Pred.
                                                                                                                                                                                                                                                                                               BY SIMILARITY.

GROWTH/DIFFERENTIATION FACTOR
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Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                      81D5B93FED6B0443
                                                                                                                                      d. No. 2e-51
Mismatches
                                                                                                                                                     526;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Joyner A.;
n factor 11, a new
embryogenesis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      345
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                     DB
                                                                                                                                                                       나,
                                                                                                                                                                                                                                                   SIMILARITY)
                                                                                                                                         <u>ب</u>
                                                                                                                                                                                                      CRC64;
                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         morphogenetic
                                             103
                                                                                                                                         Indels
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NG DEVELOPMENT.
NAL AND NEURAL
N (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     member
                                                                                                                                                                        345
                                                                                                                                       0;
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Fi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                       Gaps
                                                                             302
                                                                                                          60
                                                                                                                                        <u>,</u>
 HERE THE PROPERTY OF THE PROPE
                                          PROSITE; FO
Growth
NON TER
PROPER
CHAIN
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SM00204; TGFB; 1. E; PS00250; TGF_BETA_1; factor; Hormone; Glyco

Glycoprotein.

140 255

POTENTIAL

INHIBIN BETA B CHAIN.

F00019; TGF-beta; 1. F00688; TGFb propeptide; 1. PD000357; TGFb; 1.

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PIR; $31441; $31

HSSP; P12643; 381

MGD; MGI:96571;

InterPro; IPR001

InterPro; IPR001

Pfam; PF00019; T

Pfam; PF00688; T

ProDom; PD000357

SMART; SM00204;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ritvos O., 7
Gilbert S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               [2]
SEQUENCE
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                                                                                                                                                                                                                          EMBL; X83376
EMBL; X69620
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Q04999; Q61277;
Q1-FEB-1994 (Rel. 28, Created)
Q1-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Inhibin beta B chain precursor (Activin beta-B chain) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Activin disrupts epithelial branching morphogenesis glandular organs of the mouse.";
Mech. Dev. 50:229-245(1995).
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MEDLINE=953
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                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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Mammalia; Eu
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTIVIN AB IS A DIMER OF BETA-A AND BETA-B.
TISSUE SPECIFICITY: UTERUS, TESTIS, OVARY, LUNG,
CJ7 EMBRYONIC STEM CELLS, AND POSSIBLY IN LIVER.
SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
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Tuuri T.,
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Eutheria; Rodentia;
                                                                                                     6571; Inhbb.
IPR001839; TGFb.
IPR001111; TGFb_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , Groome N., Smith J.C.; re expressed in preimplantation mouse embryos and in ES and are regulated on their differentiation."; 117:711-723(1993). v: INHIBINS AND ACTIVINS INHIBIT AND ACTIVATE
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A IS A DIMER OF ALPHA AND BETA-A.
B IS A DIMER OF ALPHA AND BETA-B.
A IS A HOMODIMER OF BETA-B.
B IS A HOMODIMER OF BETA-B.
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1997; PubMed=7619733;
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CAA49326.1;
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X MEDLINE=91029482; PubMed=2225063;

X MEDLINE=9102948
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Archosauria;
Gallus.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasian
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IHBB CHICK STANDARD; PRT; 391 AA.
P27093; 073796;
01-AUG-1992 (Rel. 23, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Inhibin beta B chain precursor (Activin beta-B
INHBB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=White leghorn; TISSUE=Ovary;
Hecht D.J., Davis A.J., Ryan I.M., Johnson P.A.;
Submitted (MAR-1998) to the EMBL/GenBank/DDBJ databases
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STRAIN-White
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TISSUE=Follicle;
Klinger H., Halaschek-Wiener J., Wohlrab B.K., Kuchler K
Submitted (JUL-1996) to the EMBL/GenBank/DDBJ databases.
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
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                                                                                      ACTIVINS.
SUBUNIT: DIMERIC, LINKED BY ONE OR MORE DISULFIDE BONDS INHIBIN A IS A DIMER OF ALPHA AND BETA-A.
INHIBIN B IS A DIMER OF ALPHA AND BETA-B.
ACTIVIN A IS A HOMODIMER OF BETA-B.
ACTIVIN B IS A HOMODIMER OF BETA-B.
SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
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52; Conservative
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2524B21DC648D9A9 CRC64;
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red. No. 7.5e-21;
Mismatches 36;
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Query Match
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Matches 49
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PRINTS; PRO0438; GFCYSKNOT.
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF BETA_1; 1.
Growth factor; Hormone; Glycoprotein SIGNAL
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EMBL; AF055478;
EMBL; M61166; AA
EMBL; M57408; AA
HSSP; P18075; 1B
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InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; I.
Pfam; PF00688; TGFb_propeptide;
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                                      GLECDGRT--NLCCRQQFYIDFRLIGWNDWIIAPSGYYGNYCEGSCP-AYLAGVPGSASS
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Similarity 41.5%; Pr
19; Conservative 17;
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January 31,
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AAA03079.1;
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POTENTIAL.
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17; Mismatches
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4.2e-20;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5.1.3
Compugen
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                                                                                                                                                                                                    activin beta B sub inhibin beta-B cha inhibin beta-B cha activin beta-B cha inhibin beta-B cha inhibin beta-B cha inhibin beta-B cha betaB inhibin beta-B cha betaB inhibin beta-B cha betaB inhibin precactivin beta-B cha ctivin beta-Tat bone morphogenetic vgr-1-related prote activin - fruit flactivin - fruit flactivin
activin beta C - m activin beta C pre vg1 embryonic grow activin beta D cha bone morphogenetic bone morphogenetic activin beta-A cha inhibin beta-A cha
                                                                                                                  transforming growt bone morphogenetic cartilage-derived activin beta C - m activin beta C pre Vgl embryonic grow activin beta D cha
                                                                                                                                                                                                                                                                                                                                                                                       Description
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IA8235 inhibin beta-B chain - mouse (fragment) N;Alternate names: activin bB chain C;Species: Mus musculus (house mouse) C;Date: 02-Jul-1996 #sequence revision 01-Aug-1997 #text_chang C;Accession: I48235; I48266; \$\overline{3}\$31441 R;Ritvos, O.; Tuuri, T.; Eramaa, M.; Sainio, K.; Hilden, K.; Mech. Dev. 50, 229-245, 1995 A;Title: Activin disrupts epithelial branching morphogenesis: A;Reference number: I48235; MUID:95344997; PMID:7619733 A;Accession: I48235 A;Status: preliminary; translated from GB/EMBL/DDBJ A;Molecule type: mRNA A;Residues: 1-234 <res> A;Cross-references: EMBL:X83376; NID:g603571; PIDN:CAA58290.1 R;Albano, R.M.; Groome, N.; Smith, J.C. Development 117, 711-723, 1993 A;Reference number: I48243; MUID:93321614; PMID:8330535 A;Accession: I48266 A;Status: preliminary; translated from GB/EMBL/DDBJ</res>	RESULT 1 IS1199 activin beta B subunit - African clawed frog C; Species: Xenopus laevis (African clawed frog) C; Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_chang C; Accession: I51199 R; Dohrmann, C.E.; Hemmati-Brivanlou, A.; Thomsen, G.H.; Fields Pev. Biol. 157, 474-483, 1993 A; Title: Expression of activin mRNA during early development: 15, Reference number: 151199; MUID:93273083; PNID:8500654 A; Reference number: I51199; MUID:93273083; PNID:8500654 A; Residues: preliminary; translated from GB/EMBL/DDBJ A; Status: preliminary; translated from GB/EMBL/DDBJ A; Molecule type: mRNA A; Residues: 1-370 < DOH> A; Cross-references: GB:S61773; NID:g386027; PIDN:AAB26863.1; I C; Superfamily: inhibin Query Match Query Match Query Match S1; Conservative 16; Mismatches 37; Indels Qy 3 GLDCDEHSTESRCCRYPLTVDFEAFGW-DWIIAPKRYKANYCSGECEFVFLG	30 212.5 33.7 350 2 JC5241 31 212.5 33.7 402 2 A45056 32 212.5 33.7 431 1 BMHU7 33 211.5 33.6 151 2 S43296 34 211.5 33.6 352 2 JC2466 35 210.5 33.4 430 2 JQ1184 36 210.5 33.4 495 2 S43294 37 210.5 33.4 495 2 S43294 38 210.5 33.4 501 2 A55452 39 208 33.0 366 2 A46607 40 206.5 32.8 452 2 I49542 41 206.5 32.8 454 1 BMHU5 42 206 32.7 366 2 A45402 43 203.5 32.3 461 2 S52408 44 201.5 32.0 410 2 A41397 45 201.5 32.0 410 2 A41397 ALIGNMENTS
hange 16-Jul-1999 .; Saxen, L.; Gilbert, S.F. is in developing glandular org 0.1; PID:g603572	2-2 K.H H	activin beta E cha osteogenic protein bone morphogenetic inhibin beta-C cha osteogenic protein bone morphogenetic cartilage-derived growth/differentia bone morphogenetic bone morphogenetic transforming growt transforming growt transforming growt transforming growt transforming growt

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RESULT 3

p41398

p41398

p41398

inhibin beta-B chain precursor - rat

N;Alternate names; inhibin/activin beta B-chain

C;Species: Rattus norvegicus (Norway rat)

C;Date: 03-Apr-1992 #sequence revision 01-Aug-1997 #text_change 16-Jul-1999

C;Accession: B41398; I53288; C40905

R;Fengy, Z.M.; Li, Y.P.; Chen, C.L.C.

Mol. Endocrinol. 3, 1914-1925, 1989

A;Title: Analysis of the 5'-flanking regions of rat inhibin alpha- and beta-B-subunit geta, Accession: B41398

A;Reference number: A41398; MUID:90190649; PMID:2628729

A;Accession: B41398

A;Status: preliminary

A;Rolecule type: DNA

A;Residues: 1-174 <FEN>

A;Cross-references: GB:M32756; GB:M32757; NID:g204943; PIDN:AAA41438.1; PID:g554460

R;Dykema, J.C.; Mayo, K.E.

Endocrinology 135, 702-711, 1994

A;Title: Two messenger ribonucleic acids encoding the common beta B-chain of inhibin and A;Cession: I53288; MUID:94307180; PMID:8033818

A:Status: preliminary: translated from GB/FMRI/DDRJ

A:Status: preliminary: translated from GB/FMRI/DDRJ
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A;Cross-references: GB:S72477; NID:g619268
R;Esch, F.S.; Shimasaki, S.; Cooksey, K.; Mercado, M.; Mason, A.J.; Ying, S.Y Mol. Endocrinol. 1, 388-396, 1987
Mol. Endocrinol. 1, 388-396, 1987
A;Title: Complementary deoxyribonucleic acid (cDNA) cloning and DNA sequence A;Reference number: A40905; MUID:90331931; PMID:2484214
A;Accession: C40905
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 133-411 <ESC>
C;Superfamily: inhibin
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A; Residues: 134,'D', 136-255 < ALB>
A; Cross-references: EMBL: X69620;
C; Superfamily: inhibin
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activin beta B-2 chain - goldfish N;Alternate names: gact 11 C;Species: Carassius auratus (gold C;Date: 31-Dec-1993 #sequence_revi C;Accession: PN0506
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                                                                                                                           PN0506
                                                                                                                                                     RESULT 4
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Best Local S
Matches 52
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                                                                                                                                                                                                                                                                          ~HTHLYHQANPRG-SAGP---CCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS
                                                                                                                                                                                                                                                                                                                                GLECDGRT -- SLCCROOFFIDERLIGWNDWIIAPTGYYGNYCEGSCP-AYLAGVPGSASS
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Similarity 44.1%;
52; Conservative 1
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                         (goldfish)
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                                                                                                                                                                                                                                                                                                                                                                                                                                  16;
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Pred. No. 1.7e-19;
Mismatches 36;
                                                                                                                                                                                                                                                                                                                                                                                                                            Score 251; DB 2;
Pred. No. 2.8e-19;
; Mismatches 36
                                                                                                   (fragment)
                            31-Dec-1993 #text
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                            17-Mar-1999
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A; Accession: PN0506
A; Molecule type: DI
A; Residues: 1-115 •
C; Superfamily: inh:
A; Accession:
A; Molecule ty
A; Residues: 1
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A;Title: Complementary DNA sequences of ovarian follicular fluid inhibin show precursor A;Reference number: A93371; MUID:86092207; pMID:2417121

A;Recession: A01394

A;Molecule type: mRNA

A;Residues: 1-349 <MAS>
A;Cross-references: GB:X03267; NID:g2005; PIDN:CAA27021.1; PID:g2006

C;Comment: The source of this protein is ovarian follicular fluid.

C;Comment: The mature protein is the carboxyl-terminal segment of a precursor polypeptic ifferent forms of inhibin have been isolated (A and B) that differ in the amino-terminal c;Comment: Inhibin is secreted by ovaries or testes and inhibits the secretion of follit
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Biochem. Biophys. Res. Commun. 193, 711-717, 1993
A;Title: Cloning and sequencing of goldfish activin subunit genes: Strong structural con
A;Reference number: PN0504; MUID:93290666; PMID:8512569
                                                             N;Alternate names: activin AB chain B
C;Species: Homo sapiens (man)
C;Date: 10-Sep-1999 #sequence revision 10-Sep-1999 #text_change 01
C;Accession: A40150; C24248; A40156; S10751
R;Mason, A.J.; Berkemeier, L.M.; Schmelzer, C.H.; Schwall, R.H.
Mol. Endocrinol. 3, 1352-1358, 1989
A;Title: Activin B: precursor sequences, genomic structure and in A;Reference number: A40150; MUID:90114200; PMID:2575216
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C;Species: Sus scrofa domestica (domestic pig)
C;Date: 30-Jun-1987 #sequence_revision 30-Jun-1987 #text_change 01-Dec-2000
C;Accession: A01394
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                                                                                                                                                                                                                                                                                          inhibin beta-B
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 type: 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GLDCDEHSTESRCCRYPLTVDFEAFGW-DWIIAPKRYKANYCSGECEFVFLQKYP----
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                                                                                                                                                                                                                                                                chain precursor - human
nes: activin AB chain B
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QANPR-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          38.9%; Score 245; DB 1; larity 41.5%; Pred. No. 1.1e-18; Conservative 17; Mismatches 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TNGGLĊĊŔQQFYIDFRLIGWNDWIIAPAGYYGNYCEĞSCP-AFLAGVPGSASS 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                39.3%; Score 247.5; DB 2; larity 43.6%; Pred. No. 1.8e-19; Conservative 13; Mismatches 40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QANPR----GSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGC 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STESRÇÇRYPLTVDFEAFGW-DWIIAPKRYKANYCSGECEFVFLQKYP----
<MAS>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -GSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              38;
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A;Cross-r_ferences: GB:M31668; GB:M31669; NID:g186419; PIDN:AAA59451.1; PID:g386827 R;Mason, KJ.; Niall, H.D.; Seeburg, P.H. Biochem: Biophys. Res. Commun. 135, 957-964, 1986
A;Title: Structure of two human ovarian inhibins.
A;Reference number: A90123; MUID:86186863; PMID:3754442
A;Accession: C24248
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Reference number: A40156; MUID:8989
A;Title: Characterization and regulation of testicular inhibin beta-subunit mRNA.
A;Reference number: A40156; MUID:89295443; PMID:2739657
A;ACcession: A40156; MUID:89295443; PMID:2739657
A;ACcession: A40156; MUID:89295443; PMID:2739657
A;ACcession: A40156
A;MOlecule type: mRNA
A;Cross-references: GB:M31632
A;ACcession: A40156; MUID:89295443; PMID:2739657
A;ACcession: A40156; MUID:89295443; PMID:2364091
A;ACcession: A4075 ACCA 1039, 125-141, 1990
A;ATILE: Characterization of recombinant human activin B.
A;ACcession: A40751; MUID:89304183; PMID:2364091
A;ACcession: A40751; MUID:89
                                                                                                                                RESULT 7

S50899
betaB inhibin precursor - bovine
C;Species: Bos primigenius taurus (cattle)
C;Date: 01-Aug-1995 #sequence_revision 01-Sep-1995 #text_chac; Cpate: 01-Aug-1995 #sequence_revision 01-Sep-1995 #text_chac; Croain: S50899
R;Thompson, D.A.; Cronin, C.N.; Martin, F.
Eur. J. Biochem. 226, 751-764, 1994
A;Title: Genomic cloning and sequence analyses of the bovine y DNase I footprinting.
A;Reference number: S50897; MUID:95112839; PMID:7813465
A;Recession: S50899
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-408 <THO>
A;Cross-references: EMBL:U16240
C;Genetics:
B.Tatyons: 151/1
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                                                                              A; Introns: 151
C; Superfamily:
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Matches
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Best Local
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                                                                                                                     151/1
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   Similarity
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38.9%;
41.5%;
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Pred. No. 1.2e
17; Mismatches
Score
Pred.
 245;
No. 1
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1.2e-18;
   DB 2;
.2e-18;
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                         Length 408;
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A; Molecule type: mRN;
A; Residues: 1-393 <W;
A; Cross-references: 1
C; Genetics:
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150103
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                                                                                                                                                                                                     C;Accession: PN0505
R;Ge, W.; Gallin, W.J.; Strobeck, C.; Peter, R.E.
Biochem. Biophys. Res. Commun. 193, 711-717, 1993
A;Title: Cloning and sequencing of goldfish activin subunit genes: A;Reference number: PN0504; MUID:93290666; PMID:8512569
A;Accession: PN0505
A;Residues: 1-115 <GEW>
C;Superfamily: inhibin
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C;Species: Brachydanio rerio (zebra fish)
C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 16-Jul-1999
C;Accession: I50103
R;Wittbrodt, J.; Rosa, F.M.
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C;Species: Carassius
C;Date: 31-Dec-1993 +
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C;Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: preliminary; translated from GB/EMBL/DDBJA;Molecule type: mRNA
A;Residues: 1-393 <WIT>
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                                                                                                                                                                                                                                                                                                                                                                                                           activin beta B-1
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                                                                                      GLDCDEHSTESRCCRYPLTVDFEAFGW-DWIIAPKRYKANYCSGECEFVFLQKYP----- 56
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                      -HTHLVHQANPR----GSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGC 108
                                                                    GLECD-GT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -HTHLVHQANPR----GSAGPCCTPTKMSPINMLYENGEGQIIYGKIPAMVVDRCGCS 109
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1448-1462,
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s: gact 2
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                                                                                                                                 38.5%; Score 242.5; DB 2; arity 41.9%; Pred. No. 6.3e-19; onservative 15; Mismatches 40;
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                                                                   NGGLCCROOFYIDFRLIGWNDWIIAPAGYYGNYCEGSCP-AYMAGVPGSASS 58
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RESULT

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R;Celeste, A.J.; Iannazzi, J.A.; Taylor, R.C.; Hewick, R.M.; Rosen, V.; Wang, E.A.; Wozn Proc. Natl. Acad. Sci. U.S.A. 87, 9843-9847, 1990
A;Title: Identification of transforming growth factor beta family members present in bon A;Reference number: A39263; MUID:91088608; PMID:2263636
A;Recession: B39263
A;Molecule type: mRNA
A;Residues: 1-513 <CEL>
A;Cross-references: GB:M60315; GB:M38694; NID:g339561; PIDN:AAA36737.1; PID:g339562
C;Genetics:
A;Gene: GDB:BMP6
A;Cross-references: GDB:127596; OMIM:112266
A;Map position: 6pter-6qter
C;Superfamily: inhibin
C;Keywords: bone; glycoprotein
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-374/Domain: propeptide #status predicted <PRO>
F;24-374/Domain: propeptide #status predicted <PRO>
F;241,269,386,404,454/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    vgr protein - rat (fragment)
C;Species: Rattus norvegicus (Norway rat)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 18-Feb-1994 #sequence_revision 26-May-1995 #text_c]
C;Accession: S37618
R;Sauermann, U.; Meyermann, R.; Schluesener, H.J.
J. Neurosci. Res. 33, 142-147, 1992
A;Title: Cloning of a novel TGF-beta related cytokine, the A;Reference number: S37618; MUID:93085758; PMID:1453478
A;Accession: S37618
A;Accession: S37618
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-207 <SAU
A;Cross-references: EMBL:X58830; NID:g57475; PIDN:CAA41634
A;Note: the sequence from Fig. 4 is inconsistent with that C;Superfamily: inhibin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BMHU6
bone morphogene
C; Species: Homo
C; Date: 18-Oct-
C; Accession: B3
A54798
Vg-1-related protein precursor - mouse C; Species: Mus musculus (house mouse) C; Date: 28-Oct-1994 #sequence_revision
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pecies: Homo sapiens (man)
ate: 18-Oct-1991 #sequence_revision 03-Aug-1995 #text_change 18-Jun-1999
ccession: B39263
                                                                                                                                                                                                                                                            402
                                                                                                                                                                    462 QTLVHLMNPEYVPKPCCAPTKLNAISVLYFDDNSNVILKKYRNMVVRACGC
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larity 42.3%;
Conservative 13
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larity 42.3%;
Conservative 13
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                                                                                                                                                                                                                                                                                                                                                  Score 232.5; DB:
Pred. No. 3.5e-17
; Mismatches 4
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Pred. No. 1.4e-17;
; Mismatches 44
    28-Oct-1994 #text_change
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       16-Jul-1999
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activin - fruit fly (Dr
C;Species: Drosophila s
C;Date: 18-Jun-1998 #se
C;Accession: PW0042
R;Kutty, G.; Kutty, R.K
Biochem. Biophys. Res.
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A; Reference number: I
A; Accession: PW0042
A; Molecule type: mRNI
A; Residues: 1-373 < KI
A; Cross-references: (C; Genetics:
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R;Lyons, K.; Grays
Proc. Natl. Acad.
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A;Molecule type: mRN
A;Residues: 1-510 <G
A;Cross-references: 1
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R;Gitelman, S.E.; Kob
J. Cell Biol. 126, 15
A;Title: Recombinant
                                                                                 RESULT 14
T25451
transforming growth factor beta homolog - Caenorhabditis elegans C; Species: Caenorhabditis elegans C; Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change C; Accession: T25451
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A;Molecule type: mRNA
A;Residues: 'M',74,'K',76-85,'P',87-510 <LYO>
A;Cross-references: GB:J04566; NID:g202352; PIDN:AAA40548.1; PID:g202353
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A;Start codon; GGT
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Identification of a new member of transforming growth factor-beta superfamily nce number: PW0042; MUID:98289585; PMID:9618266
                                                                                                                                                                 AHFIEEYRKMGLMNGMRPCCAPIKFSSMSLIYYGDDG-IIKRDLPKMVVDECGC 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QTLVHLMNPEYVPKPCCAPTKLNAISVLYFDDNSNVILKKYRNMVVRACGC 509
                                                                                                                                                                                                                                                --LVHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGC 108
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                                                                                                                                                                                                        THLVHQANPRG---SAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGC 108
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rences: EMBL:X80992; NID:g530729; PIDN:CAA56917.1; PID:g530730
Graycar, J.L.; Lee, A.; Hashmi, S.; Lindquist, P.B.; Chen, E.Y.; Hogan, B.L Acad. Sci. U.S.A. 86, 4554-4558, 1989
-1, a mammalian gene related to Xenopus Vg-1, is a member of the transformin number: A33925; MUID:89282810; PMID:2734307
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larity 42.3%; Pred. No. 5.6e-17;
Conservative 13; Mismatches 44;
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Kobrin, M.S.; Ye, J.Q.; Lopez, A.R.; Lee, A.; Derynck, R.
, 1595-1609, 1994
ant vgr-1/BMP-6-expressing tumors induce fibrosis and endochondral boner: A54798; MUID:94375533; PMID:8089189
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                   #text_change 17-Mar-2000
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R;Bentley D.
submitted to the EMBL Data Library, December 1996
A;Description: The sequence of C. elegans cosmid B0412.
A;Reference number: Z20037
A;Recession: T25451
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-350 <BEN>
A;Cross-references: EMBL:U80953; PIDN:AAB52554.1; GSPDB:GN00021
A;Experimental source: strain Bristol N2; clone B0412
C;Genetics:
A;Gene: daf-7
A;Map position: 3
A;Introns: 43/3; 123/3; 184/2; 288/3
C;Superfamily: inhibin
                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 15
$43295
bone morphogenetic protein homolog GDF6 precursor - mouse (fragment)
N;Alternate names: growth and differentiation factor 6
C;Species: Mus musculus (house mouse)
C;Date: 20-Oct-1994 #sequence_revision 07-Feb-1997 #text_change 26-May-2000
C;Accession: $43295
R;Storm, E.E.; Huynh, T.V.; Copeland, N.G.; Jenkins, N.A.; Kingsley, D.M.; Lee, S.J.
Nature 368, 639-643, 1994
A;Title: Limb alterations in brachypodism mice due to mutations in a new member of the A;Reference number: $43294; MUID:94195427; PMID:8145850
A;Accession: $43295
A;Molecule type: DNA
A;Cross-references: EMBL:U08338; NID:g488463; PIDN:AAA18779.1; PID:g488464
C;Genetics:
C;Genetics:
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C;Superfamily: inhibin
F;1-5/Domain: polybasic protease recognition site #status
F;6-125/Product: bone morphogenetic protein homolog GDF6 (
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Search completed: January 31, 2003, 18:18:59 Job time: 15 secs
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                                                                                                                                                                                 HGKKSRLRCSRKPLHVNFKELGWDDWIIAPLEYEAYHCEGVCDFPLRSHLEPTNHAIIQT
                                                                                                                                                                                                                HSTES--RCCRYPLTVDFEAFGW-DWIIAPKRYKANYCSGECEFVFLQKY-PHTH-
                                                                                         LMNSMDPGSTPPSCCVPTKLTPISILYIDAGNNVVYKQYEDMVVESCGC 124
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                                                                                                                                  LVHQANPRGSAGPCCTPTKMSPINMLYFNGEGQIIYGKIPAMVVDRCGC 108
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Title: Perfect so Sequence: Result Minimum Maximum Run on: OM protein Database Post-processing: Total number Scoring table: Pred. No. score grea and is dea 80 score: 2448 2448 2448 2442 2444 Score ŀ seq length: seq length: No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution. O H protein search, BLOSUM62 Gapop 10.0 Query Match PIR 1: 1 2: 1 3: 1 hits satisfying chosen parameters: US-09-620-586B-11 629 January 283224 seqs, Minimum Match 0% Maximum Match 10 Listing first 45 DFGLDCDEHSTESRCCRYPL. Copyright R 73:*
pir1:*
pir2:*
pir3:* Length 2000000000 31, 2003, GenCore (c) 1993 using Gapext 96134422 100% 45 si BMHU6 A54798 A29619 S43295 B55452 PW0042 JC4862 WFPGBA S31440 B40905 S50898 I47072 B24248 JC4151 I51284 JC5366 S70580 JH0690 A45056 I51199 I48235 B41398 PN0506 WFPGBB A40150 S50899 I50103 PN0505 S37618 18:17:50 summaries ¥ 0 SUMMARIES version - 2003 mode1 residue ū ; Search time 14 Seconds
(without alignments)
748.475 Million cell updates/sec 5.1.3 Compugen .KEQIIYGKIPAMVVDRCGCS bone morphogenetic Vg-1-related prote Vg-1-related prote Vg1 embryonic grow bone morphogenetic cartilage-derived activin beta-A chainhibin beta-Chainhibin beta-Chainhib activin beta Binhibin beta-B
inhibin beta-B
betaB inhibin p activin beta B inhibin beta-B inhibin beta-B activin beta Bactivin beta C - m activin beta C pre bone morphogenetic osteogenic protein activin beta B-activin beta B-1 Description В B-2 c B cha B cha prec B z B-1 c sub cha cha -2 c

RESULT 1 IS1199 activin beta B subunit - African clawed frog C;Species: Xenopus laevis (African clawed frog) C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 16-Jul-1999 C;Accession: IS1199 R;Dohrmann, C.E.; Hemmati-Brivanlou, A.; Thomsen, G.H.; Fields, A.; Woolf, T.M.; Melton, Dev. Biol. 157, 474-483, 1993 A;Title: Expression of activin mRNA during early development in Xenopus laevis. A;Reference number: IS1199 A;Reference number: IS1199; MUID:93273083; PMID:8500654 A;Accession: IS1199 A;Status: preliminary; translated from GB/EMBL/DDBJ A;Residues: 1-370 <DOH> A;Cross-references: GB:S61773; NID:g386027; PIDN:AAB26863.1; PID:g386028 C;Superfamily: inhibin Ş 멍 Ś Query Match Best Local S Matches 50 256 57 ω GLECDGHT--NLCCRQQFYIDFRLIGWNDWIIAPAGYYGNYCEGSCP-AYLAGVPGSASS 312 -HTHLVHQANPR----GSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109 10.4%; Score 254; DB 2; Length 370; Similarity 42.4%; Pred. No. 8e-20; 50; Conservative 17; Mismatches 37; Indels Indels 14; Gaps ເກ **`**•

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A;Accession: 148266 A;Status: preliminary; translated from GB/EMBL/DDBJ	I48243; MUID:93321614; PMID:8330535	A;Title: Activins are expressed in preimplantation mouse embryos and in ES and EC cells	R;Albano, R.M.; Groome, N.; Smith, J.C.	A;Cross-references: EMBL:X83376; NID:g603571; PIDN:CAA58290.1; PID:g603572	A; Residues: 1-234 < RES>	A; Molecule type: mRNA	A;Status: preliminary; translated from GB/EMBL/DDBJ	A; Accession: I48235	A; Reference number: I48235; MUID: 95344997; PMID: 7619733	A;Title: Activin disrupts epithelial branching morphogenesis in developing glandular org	Mech. Dev. 50, 229-245, 1995	R;Ritvos, O.; Tuuri, T.; Eramaa, M.; Sainio, K.; Hilden, K.; Saxen, L.; Gilbert, S.F.	C; Accession: I48235; I48266; S31441	C;Date: 02-Jul-1996 #sequence_revision 01-Aug-1997 #text_change 16-Jul-1999	C; Species: Mus musculus (house mouse)	N;Alternate names: activin bB chain	inhibin beta-B chain - mouse (fragment)	I48235	RESULT 2	

B

313

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A; Molecule type: DNA
A; Residues: 1-174 < FEN>
A; Residues: 1-174 < FEN>
A; Cross-references: GB: M32756; GB: M32757; NID: g204943;
R; Dykema, J.C.; Mayo, K.E.
Endocrinology 135, 702-711, 1994
A; Title: Two messenger ribonucleic acids encoding the capacity and the capacity of the capa
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inhibin beta-B chain precursor - rat
N;Alternate names: inhibin/activin beta B-chain
C;Species: Rattus norvegicus (Norway rat)
C;Date: 03-Apr-1992 #sequence revision 01-Aug-1997 #text_change 16-Jul-1999
C;Accession: B41398; I53288; C40905
R;Feng, Z.M.; Li, Y.P.; Chen, C.L.C.
Mol. Endocrinol. 3, 1914-1925, 1989
A;Title: Analysis of the 5'-flanking regions of rat inhibin alpha- and beta-A;Reference number: A41398; MUID:90190649; PMID:2628729
A;Accession: B41398
A;Status: preliminary
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A; Residues: 134,'D',136-255 < ALB >
A; Cross-references: EMBL:X69620; C; Superfamily: inhibin
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R;Esch, F.S.; Shimasaki, S.; Cooksey, K.; Mercado, M.; Mason, A.J.;
Mol. Endocrinol. 1, 388-396, 1987
A;Title: Complementary deoxyribonucleic acid (cDNA) cloning and DNA
A;Reference number: A40905; MUID:90331931; PMID:2484214
A;Accession: C40905
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activin beta B-2 chain - gold:
N;Alternate names: gact 11
C;Species: Carassius auratus
C;Date: 31-Dec-1993 #sequence
C;Accession: PN$506
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A;Molecule type: mRNA
A;Residues: 133-411 <ESC>
C;Superfamily: inhibin
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A; Residues: 1-7 < RES>
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gact 11
                             auratus (goldfish)
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43.2%; Pred. No. 4e-
ive 17; Mismatches
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A; Accession: PN0506
A; Molecule type: DN
A; Residues: 1-115 <
C; Superfamily: inhil
                                                                                           C; Date: 10-Sep-1999
C; Accession: A40150
R; Mason, A.J.; Berk
Mol. Endocrinol. 3,
A; Title: Activin B:
 A; Reference number:
A; Accession: A40150
A; Molecule type: DN
A; Residues: 1-407 <
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Biochem. Biophys. Res. Commun. 193, 711~717, 1993
A;Title: Cloning and sequencing of goldfish activin subunit genes: Strong structural
A;Reference number: PN0504; MUID:93290666; PMID:8512569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 1-349 < MAS>
A; Residues: 1-349 < MAS>
A; Cross-references: GB: X03267; NID: g2005; PIDN: CAA27021.1; PID: g2006
C; Comment: The source of this protein is ovarian follicular fluid.
C; Comment: The mature protein is the carboxyl-terminal segment of a precursor polypeptid ifferent forms of inhibin have been isolated (A and B) that differ in the amino-terminal C; Comment: Inhibin is secreted by ovaries or testes and inhibits the secretion of follit C; Superfamily: inhibin
C; Superfamily: inhibin
C; Keywords: contraceptive; follitropin inhibitor; glycoprotein; gonad
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C;Species: Sus scrofa domestica (domestic pig)
C;Date: 30-Jun-1987 #sequence_revision 30-Jun-1987 #text_C;Accession: A01394
R;Mason, A.J.; Hayflick, J.S.; Ling, N.; Esch, F.; Ueno, Nature 318, 659-663, 1985
A;Title: Complementary DNA sequences of ovarian follicularity of the complementary DNA sequences of ovarian follicularity.
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A;Residues:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 Similarity
48; Conserv
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                                            o sapiens (man)
-1999 #sequence revision 10-Sep-1999 #text_change 01-Dec-2000
40150; C24248; Ā40156; S10751
Berkemeier, L.M.; Schmelzer, C.H.; Schwall, R.H.
1. 3, 1352-1358, 1989
in B: precursor sequences, genomic structure and in vitro actimber: A40150; MUID:90114200; PMID:2575216
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larity 40.7%;
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tivin AB chain B
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Pred. No. 1.5e-18;
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Mismatches
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                                                                                                     structure and in vitro activities
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A; Gene: GDB: INHBB
A; Cross-references: GDB: 119347; O
A; Map position: 2cen-2q13
C; Superfamily: inhibin
C; Keywords: glycoprotein; gonad;
F; 1-20/Domain: signal sequence #s
F; 21-292/Domain: propeptide #stat
F; 293/Product: inhibin beta-B cha
F; 93/Binding site: carbohydrate (
                                                                                                                                                                    R;Thompson, D.A.; Cronin, C.N. Eur. J. Biochem. 226, 751-764, A;Title: Genomic cloning and sy DNase I footprinting. A;Reference number: S50897; MUA;Accession: S50899
                                                    A; Residues: 1-408 <TE
A; Cross-references: C; Genetics:
A; Introns: 151/1
C; Superfamily: inhib
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A;Molecule type: protein
A;Molecule type: protein
A;Residues: 293-294,'GX',297-302,'XX',305-3
C;Comment: Activins A and B are homodimers
bin beta-A and beta-B, respectively.
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A;Experimental source: testis
R;Schmelzer, C.H.; Burton, L.E.; Tamony, C.Biochim. Biophys. Acta 1039, 135-141, 1990
A;Title: Purification and characterization
A;Reference number: S10751; MUID:90304183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Residues: 55-407 <MA2>
A;Residues: 55-407 <MA2>
A;Cross-references: GB:M13437; NID:g186416;
R;Feng, Z.M.; Bardin, C.W.; Chen, C.L.C.
Mol. Endocrinol. 3, 939-948, 1989
A;Title: Characterization and regulation of A;Reference number: A40156; MUID:89295443; 1A;Accession: A40156
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A; Residues: 22-46, 'A', 48-407
A; Cross-references: GB: M31632
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references:
R;Mason, A.J.; Nial
                                                                                                                                                                                                                                                                             C;Species: Bos primigenius taurus (cattle)
C;Date: 01-Aug-1995 #sequence_revision 01-
C;Accession: S50899
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A; Molecule type: mRI
                                                                                                                                     A;Status: preliminary
A;Molecule type: DNA
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llarity 40.7%;
Conservative 1
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226, 751-764, 1994
                                                                                                                         <OHI>
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38.5%;
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Pred.
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No.
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PMID:2364091
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PMID:2739657
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#iochem. Biophys. Res. Commun. 193, 711-717, 1993
A;Title: Cloning and sequencing of goldfish activin subunit ger
A;Reference number: PN0504; MUID:93290666; PMID:8512569
A;Accession: PN0505
A;Molecule type: DNA
A;Residues: 1-115 <GEW>
C;Superfamily: inhibin
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A; Residues: 1-393 <WJ
A; Cross-references: F
C; Genetics:
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C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change
C;Accession: I50103
R;Wittbrodt, J.; Rosa, F.M.
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A; Status: preliminary; translated from GB/EMBL/DDBJ
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-HTHLYHQANPR----GSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGC
                                                                             GLDCDEHSTESRCCRYPLTVDFEAFGW-DWIIAPKRYKANYCSGECEFVFLQKYP--
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                                                      TNGGLCCRQQFYIDFRLIGWNDWIIAPAGYYGNYCEGSCP-AYMAGVPGSASS
                                                                                                           38.1%; Score 239.5; DB 2; larity 41.0%; Pred. No. 9.1e-19; Conservative 16; Mismatches 40;
                                                                                                                                                                                                                                                                                                                  chain - goldfish (fragment)
; gact 2
                                                                                                                                                                                                                                                                                                                                                                                                    38.4%; Score 241.5; DB 2; larity 40.7%; Pred. No. 1.9e-18; Conservative 18; Mismatches 39;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of mesoderm and axis formation in f 150103; MUID:95011555; PMID:7926744
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                                                                                                                                                                                                                                                                                        revision 31-Dec-1993 #text_change 17-Mar-1999
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vgr protein - rat (fragment, C;Species: Rattus norvegicus (Norway rat, C;Species: Rattus norvegicus (Norway rat, C;Species: Rattus norvegicus (Norway rat, C;Species: Ref-1994 #sequence_revision 26-May-1995 #text_c.... C;Accession: S37618
R;Sauermann, U.; Meyermann, R.; Schluesener, H.J.
J. Neurosci. Res. 33, 142-147, 1992
A;Title: Cloning of a novel TGF-beta related cytokine, the A;Reference number: S37618; MUID:93085758; PMID:1453478
A;Accession: S37618
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-207 <SAU>
A;Cross-references: EMBL:X58830; NID:g57475; PIDN:CAA41634
A;Note: the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that a constant of the sequence from Fig. 4 is inconsistent with that the constant of the sequence from Fig. 4 is inconsistent with that the constant of the sequence from Fig. 4 is inconsistent with that the constant of the sequence from Fig. 4 is inconsistent with the constant of the sequence from Fig. 4 is inconsistent with the constant of the sequence from Fig. 4 is inconsistent with the constant of the sequence from Fig. 4 is inconsistent of the constant of the sequence from Fig. 4 is inconsistent of the constant of the constant of the constant of the
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A;Map position: 6pter-6qter
C;Superfamily: inhibin
C;Keywords: bone; glycoprotein
F;1-23/Domain: signal sequence #status predicted <SIG>F;24-374/Domain: propeptide #status predicted <PRO>F;375-513/Product: bone morphogenetic protein 6 #status
F;241,269,386,404,454/Binding site: carbohydrate (Asn)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Accession: B39263
A;Molecule type: mRNA
A;Residues: 1-513 <CEL>
A;Cross-references: GB:M60315; GB:M38694; NID:g339561;
C;Genetics:
A;Gene: GDB:BMP6
Vg-1-related protein precursor - mous C;Species: Mus musculus (house mouse) C;Date: 28-Oct-2994 #sequence_revisio
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larity 42.3%;
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Pred. No. 2.4e-17;
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ed. No. 9.5e-18;
Mismatches 44
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    28-Oct-1994 #text
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A; Accession: A29619
A; Molecule type: mRNA
A; Residues: 1-360 <WEE>
A; Cross-references: GB: N
C; Superfamily: inhibin
C; Keywords: growth facto
bone morphogenetic p
N;Alternate names: g
C;Species: Mus muscu
C;Date: 20-Oct-1994
C;Accession: S43295
R;Storm, E.E.; Huynh
Nature 368, 639-643,
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A;Title: Vgr-1, a mammalian gene related to Xenopus Vg-1, is a men A;Reference number: A33925; MUID:89282810; PMID:2734307
A;Status: preliminary
A;Molecule type: The company of the company o
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A;Molecule type: mRNA
A;Residues: 1-510 <GI
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Cell 51, 861-867, 1987
A;Title: A maternal mRNA localized to the vegetal hemisphere
A;Title: A maternal mRNA localized to the vegetal hemisphere
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A; Residues: 'M',
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R; Gitelman, S.E.
J. Cell Biol. 12
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A;Cross-referenc
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Similarity 42.3%;
47; Conservative 1:
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Similarity 40.2%;
43; Conservative 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360 <WEE>
    Huynh, T.V.;
9-643, 1994
                                                                                                          etic protein homolog GDF6 precursor - mouse (fragment)
nes: growth and differentiation factor 6
musculus (house mouse)
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26, 1595-1609, 1994
Inant vgr-1/BMP-6-expressing tumors induce fibrosis and endochondral per: A54798; MUID:94375533; PMID:8089189
 643,
                                                        994 #sequence_
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74,'K',76-85,'P',87-510 <LYO>
es: GB:J04566; NID:g202352; PIDN:AAA40548.1;
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                            Copeland, N.G.; Jenkins,
                                                                                    revision 07-Feb-1997 #text
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Pred. No. 4.2e-16;
3; Mismatches 32;
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Pred. No. 3.9e-17;
3; Mismatches 44;
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3.; Chen, E.
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RESULT 15
B55452
cartilage-derived morphogenetic protein 2 precursor - bovine (fragment)
C;Species: Bos primigenius taurus (cattle)
C;Date: 10-Feb-1995 #sequence_revision 10-Feb-1995 #text_change 26-May-2000
C;Accession: B55452
R;Chang, S.C.; Hoang, B.; Thomas, J.T.; Vukicevic, S.; Luyten, F.P.; Ryba, N.J.P.;
J. Biol. Chem. 269, 28227-28234, 1994
A;Title: Cartilage-derived morphogenetic proteins. New members of the transforming
A;Reference number: A55452; MUID:95050604; PMID:7961761
A;Accession: B55452
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-436 < CHA>
A;Cross-references: GB:U13661; NID:g632489; PIDN:AAA61416.1; PID:g632490
C;Superfamily: inhibin
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A;Accession: S43295
A;Molecule type: DNA
A;Residues: 1-125 <STO>
A;Cross-references: EMBL:U08338; NID:g488463; PIDN:AAA18779.1; PID:g488464
C;Genetics:
A;Gene: Gdf6
C;Superfamily: inhibin
F;1-5/Domain: polybasic protease recognition site #status predicted <PPR>
F;6-125/Product: bone morphogenetic protein homolog GDF6 (fragment) #status pred
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ALIGNMENTS

PRT;

375 AA.

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Query Match 100.0%; Score 629; DB 1; Length 375; Best Local Similarity 100.0%; Pred. No. 1.2e-62;	SQ SEQUENCE 375 AA; 42707 MW; DA732DB9426E4D4F CRC64;	CARBOHYD 71 71 N-LINKED (GLCNAC)	DISULFID 339 339 INTERCHAIN (BY	DISULFID 313 374 BY SIMILARITY.	DISULTION 209 372 BY SIMILARITY	CHAIN 267 375 GRO	PROPER 24 266 POTENTIAL.	SIGNAL 1 23	Growth factor; Cytokine; Glyc	PROSITE; PS00250; TGF_BET	SMART; SM00204; TGFB; 1.	ProDom; PD000357; TGFb; 1.	Pfam; PF00688; TGFb prope	Pfam: PF00019: TGF-beta: 1	בוברת ב בוברת ב	TETOTOR TOURS LEMP.			or send an email to license@	entities requires a license agreement (See http://www.isb-sib.c)	modified and this statement is not removed. Usage by and for commerc	use by non-profit institutions as long as its content is in no	the European Bioinformatics Institute. There are no res	between the Swiss Institute of Bioinformatics and	This SWISS-PROT entry is copyright. It is produce	***************************************	-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMIL	-!- SUBUNIT	MUSCLE GROWTH.	- :- FUNCTION: ACTS SPECIFICALLY AS	Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).	"Double muscling in cattle due to	McPherron A.C., Lee SJ.:	MEDITUE=98024153: PubMed=9356471:	STRAIN=White				Gallus.	Archosauria: Aves: Neognathae: Galliformes: Phasiani	Eukarvota: Met		GDF8 OR MSTN.	Growth/differentiation factor 8 precursor (16-OCT-2001 (Rel. 40,	15-JUL-1999 (Rel. 38, Last sequence	15-JUL-1999 (Rel. 38,

g

327

GDF8

HUMAN

STANDARD;

HUMAN

NCBI_TaxID=9606;

EQUENCE

FROM N.A.

Eukaryota; Homo sapiens

(Human)

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61

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267

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Matches

109;

Conservative

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[2]
SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
TISSUE=Muscle;
MEDLINE=99061972; PubMed=9843994;
MEDLINE=99061972; PubMed=9843994;
Gonzalez-Cadavid N.F., Taylor W.E., Y
Gonzalez-Cadavid N.F., Lalani R.,
Y Ezzat S., Shen R., Lalani R.,
                                                                   MIM; 601788; ...
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb.N.
Pfam; PF00019; TGF-beta; I.
Pfam; PF00688; TGFb propeptide; 1
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF BETA 1; 1.
PROSITE; PS00250; TGF BETA 1; 1.
                                                                                                                                                                                                                                                                                                                                                                           Ma K., Ezzat S., Shell R., Line Arver S., Bhasin S.;

Norganization of the human myostatin gene and expression men and HIV-infected men with muscle wasting.";

Proc. Natl. Acad. Sci. U.S.A. 95:14938-14943(1998).

-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR (MUSCLE GROWTH.

-!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY)

-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Growth/differentiation factor 8 precursor (GD
GDF8 OR MSTN.
                                                                                                                                                                                                                                                                                 the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed entities requires a license agreement (Secons send an email to license@isb-sib.ch).
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MEDLINE=98024153; PubMed=9356471;
McPherron A.C., Lee S.-J.;
"Double muscling in cattle due to Proc. Natl. Acad. Sci. U.S.A. 94:
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AF104922; AAC96327.1; -.
P18075; IBMP.
; HGNC:4223; GDF8.
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Eutheria; Primates;
                                                                  Glycoprotein;
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GROWTH/DIFFERENTIATION F
BY SIMILARITY.
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Catarrhini;
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16-OCT-2001 (
Growth/differ GDF8 OR MSTN. Meleagris gal Eukaryota; Me Archosauria;
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TISSUE=Skelet
MEDLINE=98024
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HSSP; P18075;
InterPro; IPR
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ProDom; PD000357; TGFb; 1.
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C., Lee S.-J.;
Cling in cattle due to mutations in the myostatin gene.";
Acad. Sci. U.S.A. 94:12457-12461(1997).

ROTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SKELETAL
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(Rel. 39, Last sequence update)
(Rel. 40, Last annotation update)
rentiation factor 8 precursor (GDF-8) (Myostatin).
100.0%; Score 629; DB 1; larity 100.0%; Pred. No. 1.2e-62; Conservative 0; Mismatches 0;
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etazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Aves; Neognathae; Galliformes; Meleagrididae; Meleagris.
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EMBL; AF188635; AAF02770.1; -.
EMBL; AF188636; AAF02771.1; -.
EMBL; AF188636; AAF02771.1; -.
EMBL; AF188638; AAF02772.1; -.
EMBL; AF188638; AAF02773.1; -.
EMBL; AF033855; AAC08035.1; -.
EMBL; AF093798; AAC62489.1; -.
HSSP; P18075; 1BMP.
InterPro; IPR001839; TGFb N.
Pfam; PF00019; TGF-beta; I.
Pfam; PF000688; TGFb propeptide; 1.
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF BETA 1; 1.
Growth factor; Cytokine; Glycoprotein; SiGNAL 1 23 POTENTIAL.
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Eukaryota; Metazoa; (
Mammalia; Eutheria; (
NCBI_TaxID=9823;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted [3]
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MEDLINE=98024153; PubMed=9356471;
MCPherron A.C., Lee S.-J.;
"Double muscling in cattle due to
Proc. Natl. Acad. Sci. U.S.A. 94:
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O18831;
15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Growth/differentiation factor 8 precursor (GD
GDF8 OR MSTN.
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STRAIN=Duroc, Hampshire, Meishan, a
TISSUE=Skeletal muscle;
Voelker G.R., Conroy J.C., Wheeler
"Porcine myostatin cDNA sequences:
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SEQUENCE FROM N.A.
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Submitted (SEP-1998) to the EMBL/GenBank/DDBJ
-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE
MUSCLE GROWTH.
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(SEP-1999) to the
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94:12457-12461(1997).
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FAMILY.
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REGULATOR OF
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RESULT 5
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Best Local S
Matches 109
EMBL; U84005; AAC53167.1; -.
HSSP; P18075; 1BMP.
MGD; MGI:95691; Gdf8.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb.N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb propeptide; 1
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1; 1.
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CARBOHYD
SEQUENCE
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MEDLINE=97284412; PubMed=9139826;
McPherron A.C., Lawler A.M., Lee S.-J.;
"Regulation of skeletal muscle mass in mice by a new TGF-beta superfamily member.";
Nature 387:83-90(1997).
-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SKINGSTONE GROWTH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    008689;
01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Growth/differentiation factor 8 precursor (GDF-8) (Myostatin).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GDF8
                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GDF8 OR
                                                                                                                                                         modified and this statement is not removentities requires a license agreement (Sor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
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                                                                                                                                                                                                                                                                     SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
TISSUE SPECIFICITY: EXPRESSED SPECIFICALLY IN DEVELOPING AND SKELETAL MUSCLE. WEAK EXPRESSION IN ADIPOSE TISSUE.
DEVELOPMENTAL STAGE: FIRST DETECTED AT DAY 9.5 POST-COITUM IN ONE-THIRD OF DEVELOPING SOMITES. AT DAY 10.5, EXPRESSED IN TH MYOTOME COMPARTMENT OF SOMITES. AT LATER STAGES OF DEVELOPMEN DETECTED IN A WIDE RANGE OF DEVELOPING MUSCLES. EXPRESSION CONTINUES IN ADULTHOOD.
SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
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larity 100.0%;
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INTERCHAIN (BY SIMILARITY)
N-LINKED (GLCNAC. . .) (PO
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 629; DB 1;
Pred. No. 1.2e-62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
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                                                                       EMBL; AF019624; AAB86691.1; -.
HSSP; P18075; 1BMP.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb N.
Pfam; PF00019; TGF-beta; I.
Pfam; PF00688; TGFb propeptide; 1
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF BETA 1; 1.
Growth factor; Cytokine; Glycopro
DISULFID DISULFID DISULFID
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035312;
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CARBOHYD
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                                                                                                                                                                                                                                                                                                                  TISSUE=Skeletal muscle;
MEDLINE=98024153; PubMed=9356471;
MCPherron A.C., Lee S.-J.;
"Double muscling in cattle due to mutations in the myostatin Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).
-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SK MUSCLE GROWTH.
-!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Growth/differentiation factor 8 precursor (GDF-8) (Myostatin)
GDF8 OR MSTN.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
[1]
                                                                SIGNAL
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POTENTIAL.
POTENTIAL.
GROWTH/DIFFERENTIATION FACTOR 8.
BY SIMILARITY.
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Pred. No. 1.2e-62;
POTENTIAL.

GROWTH/DIFFERENTIATION FACTOR
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
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Sciurognathi; Muridae; Murinae; Rat
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InterPro; IPR0011111; TGFb N.
Pfam; PF00019; TGF-beta; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=98024153; PubMed=93564/1;
MEDLINE=98024153; PubMed=93564/1;
McPherron A.C., Lee S.-J.;
"Double muscling in cattle due to mutations in the myostatin gene.";
"Double muscling in cattle due to mutations in the myostatin gene.";
Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).

Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).
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NCBI_TaxID=9557;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Growth/differentiation factor 8 precursor (GDF-8) (Myostatin)
GDF8 OR MSTN.
                                                                                                                                                                                                   Pfam; PF0001
Pfam; PF0068
                                                                                                                                                                                                                                                                                           or send an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
TISSUE=Skeletal mu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Papio hamadr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     328
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Match
                                                                                                                                                                                                                                                                                                                                                                                           SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY). SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AHAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEGLDCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEGLDCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    109;
                                                                                                                                                 factor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sim
                                                                                                                                                                                                                                                                                         email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
                                                                                                                                                                204; TO
                                       375
                                                 24
267
281
309
313
339
71
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72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
llarity 100.0%;
Conservative 0
                                                                                                                                              0357; TGFb; 1.
04; TGFB; 1.
0250; TGF BETA 1; 1.
0250; TGF BETA 1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  yas (Hamadryas baboon)
                                                                                                                                                                                       TGFb_propeptide; 57; TGFb; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          muscle;
                                                               266
375
340
372
372
374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42829 MW;
                                       42688 MW;
 99.0%;
99.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
 Score
Pred.
                                    N-LINKED (GLCNAC. . .) (P
7849890ACAB926EA CRC64;
                                               GROWTH/DIFFERENTIATION FACTOR 8.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POTENTIAL)
                                                                                                                            POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 629; DB 1;
Pred. No. 1.2e-62;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     933043D8C8C3294B CRC64;
623; DB 1;
No. 5.8e-62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA
            Length 375;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
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Sim

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RESULT
GDF8_SH
ID GI
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                                          Query
Best I
                                  Matches
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15-JUL-1999 (Rel. 38, Last sequence upda
16-OCT-2001 (Rel. 40, Last annotation up
Growth/differentiation factor 8 precurso
GDF8 OR MSTN.
Ovis aries (Sheep).
Eukaryota; Metazoa; Chordata; Craniata;
Mammalia; Eutheria; Cetartiodactyla; Run
                                                                                                                                                                                EMBL; AF019622; AAB86687...,
HSSP; P18075; 1BMP.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                  Mammalia; Eutnerinae;
Bovidae; Caprinae;
NCBI_TaxID=9940;
                                                                                                                                                      PROSITE; rac-
                                                                                                                                                                                                                                                                                                                                                                                                                      [1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GDF8_SH
O18830;
                                                                    DISULFID
DISULFID
DISULFID
DISULFID
CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
TISSUE=Skeletal muscle;
MEDLINE=98024153; PubMed=9356471;
MEDLINE=98024153; PubMed=9356471;
MCPherron A.C., Lee S.-J.;
"Double muscling in cattle due to mutations in the myostatin gene.";
Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).
-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SKELETAL
MUSCLE GROWTH.
                                                                                                                                                    Growth
SIGNAL
                                                                                                                                                           ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF BETA
Growth factor; Cytokine; G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SHEEP
                                                                                                                                             PROPEP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13
                                          Local
67
                                                    Match
                                                                                                                                                                                                                                                                                                                                       SUBUNIT: HOMODIMER; SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZHEEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
108;
                                106; Conservative
                                                                     375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                              24
267
281
309
313
339
348
71
                                                                     AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; Chordata; Craniata; Vertebrata; Eutel; Cetartiodactyla; Ruminantia; Pecora; Ovis.
                                                                                      266
375
340
372
374
339
                                                                      42827 MW
                                          98.4%;
97.2%;
                                                                                                                                                                                                                                                                                                                                      DISULFIDE-LINKED (BY SIMILARITY)
TO THE TGF-BETA FAMILY.
                                                                                                                                                  Glycoprotein;
POTENTIAL.
                                                                                                                                                                       <u>'</u>--
                                                                GROWITH, L...
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                 2;
                                          Score
Pred.
                                                                                                                GROWTH/DIFFERENTIATION FACTOR BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                             POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                ore 619; DB 1
ed. No. 1.6e-6
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
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                                                                                                                                                             Signal
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ate)
(GDF-8)
                                            61;
                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Myostatin)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euteleostomi;
                                                                              (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         109
                                                    375
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bovoidea;
                                                                                                                                    α
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                                 0;
                                                                                                                                                                                                                                                                                                            collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           326
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                 60
                                                                                                                                                                                                                                                                                            way
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RESULT
GDF8_BC
ID GI
AC O1
DT 15
DT 15
DT 15
DT 62
CGN GI

RA RC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.,
SEQUENCE FROM N.A.,
STRAIN=Friesian; TISSUE=Musc.t.,
MEDLINE=97458167; PubMed=9314496;
MEDLINE=97458167; PubMed=9314496;
Kambadur R., Sharma M., Smith T.P.L., Bass J.J.;
Kambadur R., Sharma M., Smith T.P.L., Bass J.J.;
"Mutations in myostatin (GDF8) in double-muscled Belgian
"Mutations in myostatin (GDF8) in double-muscled Belgian
"Amontese cattle.";
"Aland TYR-313.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-JUL-1998
15-JUN-2002
                                                                                                                                                      modified and
entities requ
or send an en
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota;
Mammalia; E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BOVIN
GDF8_1
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Mol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      McPherron A.C., Lee S.-J.; "Double muscling in cattle due to mutations in the myostatin Proc. Natl. Acad. Sci. U.S.A. 94:12457-12461(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A., AND VARIANTS MH LEU-94
STRAIN=Holstein; TISSUE=Skeletal muscle;
MEDLINE=98024153; PubMed=9356471;
                       EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
MEDLINE=21343337; PubMed=11451380;
Jeanplong F., Sharma M., Somers W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   018836;
                                                                                                                                                                                                                                                                                                                                                                                    MUSCLE GROWTH.

-!- FUNCTION: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SKELETAL MUSCLE GROWTH.

-!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).

-!- TISSUE SPECIFICITY: SPECIFICALLY EXPRESSED IN DEVELOPING AND ADULT SKELETAL MUSCLE. HIGHEST LEVELS FOUND IN THE HINDLIMB MUSCLES

M.SEMIMEMBRANOSUS AND M.BICEPS FEMORIS; LOW LEVELS IN OTHER HINDLIMB MUSCLES.

-!- DEVELOPMENTAL STAGE: WIDELY EXPRESSED THROUGHOUT DEVELOPMENT.

-!- DEVELOPMENTAL STAGE: WIDELY EXPRESSED THROUGHOUT DEVELOPMENT.

-!- DISEASE; DEFECTS IN GDEN ARE THE CAUSE OF THE DOUBLE-MUSCLE PHENOTYPE OR MUSCULAR HYPERTROPHY (MH), AN AUTOSOMAL RECESSIVE DISEASE FREQUENTLY FOUND IN THE BELGIAN BLUE AND PIEDMONTESE CAUTILE BREEDS. THIS DISEASE IS CHARACTERIZED BY AN INCREASED NUMBER OF MUSCLE FIBERS (HYPERPLASIA), RESULTING IN AN INCREASE IN MUSCLE MASS OF 20-25%.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bovidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bos taurus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Genomic
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                                                                                                                                                                                                                                                                                                             8 SWISS-PROT
                                                                                                                                                                                                                                                          European
                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BOVIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cell.
                     AF019761;
AF019620;
AF320998;
P18075; 1BI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F., Sharma M., Somers W.G., Bass J.J., organization and neonatal expression of
                                                                                                                                                                                                                                      non
                                                                                                                                                                                 requires
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Metazoa; Chordata; Craniata; Vertebrat
Eutheria; Cetartiodactyla; Ruminantia;
                                                                                                                                                  -PROT entry is copyright. It is produced through a collaboration ne Swiss Institute of Bioinformatics and the EMBL outstation and Bioinformatics Institute. There are no restrictions on its unsprofit institutions as long as its content is in no way this statement is not removed. Usage by and for commercial equires a license agreement (See http://www.isb-sib.ch/announce/email to license@isb-sib.ch).
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NN: ACTS SPECIFICALLY AS A
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(Rel. 3
(Rel. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (Rel. 36, Created)
(Rel. 41, Last sequence update)
(Rel. 41, Last annotation update)
rentiation factor 8 precursor (GD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           inae;
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                             1BMP
                                               AAB81508.1;
AAB86687.1;
AAG48116.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q95N97;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GDF-8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kambadur R.;
the bovine myostatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Myostatin)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               375
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene."
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IPR001839; TGFb.

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STITITION OF THE STITIT
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GDFB_MC
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Best Loc
Matches
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Mus musculus (Mouse)
Eukaryota; Metazoa; (
Mammalia; Eutheria; )
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CARBOHYD
CARBOHYD
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16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Growth/differentiation factor 11 precursor
11).
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SIGNAL
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Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide;
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1; 1
                                                                                                                                                                                                                                              STRAIN=129/SvJ;
MEDLINE=99318097; PubMed=10391213;
MCPherron A.C., Lawler A.M., Lee S.-J.;
"Regulation of anterior/posterior patterning
growth/differentiation factor 11.";
Nat. Genet. 22:260-264(1999).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dev.
                     SEQUENCE OF 75-405 FROM N.A.
MEDLINE=99173787; PubMed=10072786;
Nakashima M., Toyono T., Akamine A., In the second of growth/differentiation by second superfamily during mouse of Mech. Dev. 80:185-189(1999).

-!- FUNCTION: SECRETED SIGNAL THAT ACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gamer L.W., Wolfman N.M., Rosen V.;
"A novel BMP expressed in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE=99177155; PubMed=10075854;
Medline=99177155; PubMed=10075854;
                                                                                                                                                                                                                                                                                                                                                                                                                    [2]
SEQUENCE FROM N.A.
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 IDENTITY ALONG
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1. 208:222-232(1999).
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Cytokine; Glycoprotein; Signal; Disease mutation.
18 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA;
THE ANTERIOR/POSTERIOR AXIS DURING
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Rodentia;
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BY SIMILARITY.

INTERCHAIN (BY SIMILARITY).

N-LINKED (GLCNAC. . .) (POTE

N-LINKED (GLCNAC. . .) (POTE

F -> L (IN MH; PIEDMONTESE E

C -> Y (IN MH; PIEDMONTESE E

M -> T (IN REF, 1).
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C -> Y (IN MH; PIEDMONTESE BREED).

M -> T (IN REF. 1).

84E1AB20650C05F6 CRC64:
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Sciurognathi;
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precursor (B
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                                                                                                          Joyner A.
n factor 1
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chi; Muridae
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Murinae; Mus
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RESULT
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GDFB_HUMAN 095390; Q9U 16-0CT-2001

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Pfam; PF00019; '
Pfam; PF00688; '
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Pfam;
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HSSP;
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                                                                                                                                                                                                                                                                                             DOMAIN
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                                                                                                                                                                                                                                                                               DOMAIN
357
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                                                                                                                     Local
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P; P18075; 1BMP.
P; P18075; 1BMP.
1; MGI:1338027; Gdf11.
2erPro; IPR001839; TGFb.
2erPro; IPR001111; TGFb.N.
2erPro; IPR001111; TGFb.N.
                                                                                                                                        Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PLAY CRITICAL ROLES IN PATTERNING BOTH MESODERMAL AND NEURAL TISSUES AND IN ESTABLISHING THE SKELETAL PATTERN.
SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
SUBCELLULAR LOCATION: Secreted (Probable).
TISSUE SPECIFICITY: HIGHLY EXPRESSED IN THE DEVELOPING LIMB BUD, INITIALLY DETECTED IN THE DISTAL MESENCHYME, AND LATER LOCALIZING IN REGIONS AROUND THE DEVELOPING BONES. IS ALSO EXPRESSED IN ADULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF100906; AAC72853.1;
AF100904; AAC72853.1;
AF100905; AAC72853.1;
AF028337; AAF21633.1;
AF028335; AAF21633.1;
AF028336; AAF21633.1;
AF092734; AAD05267.1;
                                                    VHQANP
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AF100904;
AF100905;
AF028337;
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Similarity 89.9%;
98; Conservative
                                                                                                                                                                                                                                                                                                                                                                                            PD000357;
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               RGSAGPCCTPTKMSPINMLYFNDKQQIIYGKIPGMVVDRCGCS
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297
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50; TGF_BETA_1; 1.
Cytokine; GTycoprotein; Signal.
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57; TGFb; 1.
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                                                                                                                                                                                                      BY SIMILARITY.

GROWTH/DIFFERENTIATION FACTOR 11.

POLY-ALA.

POLY-GLY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

INTERCHAIN (BY SIMILARITY).

N-LINKED (GLCNAC. . .) (POTENTIAL).
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                                                                                                         7;
                                                                                                           Score 581; DB Pred. No. 2.9e 7; Mismatches
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-> N (IN REF. 2).
A74E382710A14781 CRC64;
                                                                                                      DB 1; L.
2.9e-57;
4;
                                                                                                                                       Length 405;
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405
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                                                                                                           Gaps
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Query Match
Best Local S
Matches 98
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SIGNAL
PROPEP
CHAIN
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Gamer L.W., Wolfman N.M., Celeste A.J.,
Rosen V.;
"A novel BMP expressed in developing mount is a potent mesoderm inducer in the complex of the complex
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SEQUENCE
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15-JUN-2002 (Rel. 41, I
Growth/differentiation
11).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=99318097; PubMed=10391213;
McPherron A.C., Lawler A.M., Lee S.-J.;
"Regulation of anterior/posterior patterning of
growth/differentiation factor 11.";
Nat. Genet. 22:260-264(1999).
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Mammalia; Eutheria;
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Pfam; PF00688; TGFb_prop
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SMART; SM00204; TGFB;
PROSITE; PS00250; TGF
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th 92.4%; Similarity 89.9%; 98; Conservative
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IPR001111; TGFb_
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208:222-232(1999).
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(etazoa; Chordata; (etazoa; Primates;
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GROWTH/DIFFERENTIATION FACTOR 11.
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                                                                                        ed. No. 3e-57;
Mismatches
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NCBI_TaxID=7955;
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Pfam; PF00688
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cling in cattle due to mutations in the myostatin gene.";
Acad. Sci. U.S.A. 94:12457-12461(1997).
N: ACTS SPECIFICALLY AS A NEGATIVE REGULATOR OF SKELETAL
                                                                                                                                           90.6%; Score 570; DB 1; I larity 88.1%; Pred. No. 4.5e-56; Conservative 11; Mismatches 2;
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rentiation factor 8 precursor (GDF~8) (Myostatin)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OT entry is copyright. It is produced through a collaboration Swiss Institute of Bioinformatics and the EMBL outstation - Bioinformatics Institute. There are no restrictions on its profit institutions as long as its content is in no way this statement is not removed. Usage by and for commercial lires a license agreement (See http://www.isb-sib.ch/announce/
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Y: BELONGS TO THE TGF-BETA FAMILY.
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GROWTH/DIFFERENTIATION FACTOR 8.
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VNKASPRGTAGPCCTPTKMSPINMLYFNGKEQIIYGKIPSMVVDRCGCS 374

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SEQUENCE FROM N.A.

ETISSUE=Dental pulp;

EX MEDLINE=99173787; PubMed=10072786;

EX MEDLINE=99173786;

EX MEDLINE=99173787; PubMed=10072786;

EX MEDLINE=99173786;

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InterPro; IPR001111; TGFb.N.
Pfam; PF00019; TGF-beta; I.
Pfam; PF00688; TGFb_propeptide; 1
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF BETA_1; 1.
Growth factor; Cytokine; Glycopro
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16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
17-OCT-2001 (Rel. 40, Last annotation update)
18-OCT-2001 (Rel. 40, Last annotation update)
19-OCT-2001 (Rel. 40, Last annotation update)
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
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le; Glycoprotein.
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GROWTH/DIFFERENTIATION FACTOR 1
POLY-GLY.
BY SIMILARITY,
INTERCHAIN (BY SIMILARITY).
                                                                                                                                                                                                                                                    Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                        N-LINKED
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Sciurognathi;
                                                                                                                                                                                                                                                                                                                                              81D5B93FED6B0443
                                                                                                                                                                                                                                 ore 534; DE ed. No. 4.26 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                   (GLCNAC. )
                                                                                                                                                                                                                                 ; DB 1;
4.2e-52;
ches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Vertebrata;
hi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Bone morphogenetic
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; Murinae; Rat
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InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb.N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb propential
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01-FEB-1994 (
01-NOV-1997 (
16-OCT-2001 (
Inhibin beta
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 Growth 1
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CHAIN
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MEDLINE=93321614; PubMed=8330535;
Albano P.M., Groome N., Smith J.C.;
Albano P.M., Groome N., Smith J.C.;

"Activins are expressed in preimplantation mouse embryos and in ES and EC cells and are regulated on their differentiation.";

Development 117:711-723(1993).

-!- FUNCTION: INHIBINS AND ACTIVINS INHIBIT AND ACTIVATE, RESPECTIVELY, THE SECRETION OF FOLLITROPIN BY THE PITUITARY GLAND. INHIBINS/ACTIVINS ARE INVOLVED IN REGULATING A NUMBER OF DIVERSE FUNCTIONS SUCH AS HYPOTHALAMIC AND PITUITARY HORMONE SECRETION, GONADAL HORMONE SECRETION, GERM CELL DEVELOPMENT AND MATURATION, ERYTHROID DIFFERENTIATION, INSULIN SECRETION, NERVE CELL SURVIVAL, EMBRYONIC AXIAL DEVELOPMENT OR BONE GROWTH, DEPENDING ON THEIR SUBJUNIT COMPOSITION. INHIBINS APPEAR TO OPPOSE THE FUNCTIONS OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        glandular organs of the mous
Mech. Dev. 50:229-245(1995).
[2]
SEQUENCE OF 134-255 FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Activin disrupts epithelial branching morphogenesis in developing glandular organs of the mouse.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HBB
                                                                                                                                                                                                                                                                                                   EMBL; X83376; CAA58290.1; -.
EMBL; X69620; CAA49326.1; -.
PIR; S31441; S31441.
HSSP; P12643; 3BMP.
MGD; MGI:96571; Inhbb.
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                                                                                                            PROSITE;
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- SUBUNIT: DIMERIC, LINKED BY O INHIBIN A IS A DIMER OF ALPHA INHIBIN B IS A HOMODIMER OF E ACTIVIN B IS A HOMODIMER OF E ACTIVIN AB IS A DIMER OF BET?

- TISSUE SPECIFICITY: UTERUS, 7

CJ7 EMBRYONIC STEM CELLS, ANI
CJ7 EMBRYONIC STEM CELLS, ANI
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                                                                                                                                      SM00204;
                                                               PD000357; TGFb; 1.

M00204; TGFB; 1.

; PS00250; TGF_BETA_1; 1.

Eactor; Hormone; Glycoprotein.
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(Rel. 28, Created)
(Rel. 35, Last sequence update)
(Rel. 40, Last annotation update)
(B chain precursor (Activin beta-B chain) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A IS A DIMER OF ALPHA AND BETA-A.

B IS A DIMER OF ALPHA AND BETA-B.

B IS A HOMODIMER OF BETA-B.

B IS A HOMODIMER OF BETA-B.

B IS A HOMODIMER OF BETA-B.

AB IS A DIMER OF BETA-A AND BETA-B.

SPECIFICITY: UTERUS, TESTIS, OVARY, LUNG, KIDNEY, LYONIC STEM CELLS, AND POSSIBLY IN LIVER.

[TY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                                  TGFb propeptide;
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255
      POTENTIAL.
INHIBIN BETA B CHAIN.
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RESULT
DVR1_BR
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                                                                                                                                                                                                                                                                    Helde K.A., Grunwald D.J.;

The DVR-1 (Vg1) transcript of zebrafish is maternally supplied and the distributed throughout the embryo.";

Dev. Biol. 159:418-426 (1993).

C -!- FUNCTION: SERVES TO FACILITATE THE DIFFERENTIATION OF EITHER MESODERM OR ENDODERM EITHER AS A COFACTOR IN AN INSTRUCTIVE SIGNAL OR BY PROVIDING PERMISSIVE ENVIRONMENT.

C -!- SUBUNIT: HOMODIMER (PROBABLE).

C -!- TISSUE SPECIFICITY: ABUNDANT IN OVARIES AND EGGS, AND EQUALLY DISTRIBUTED AMONG ALL BLASTOMERES.

C -!- DEVELOPMENTAL STAGE: CONCENTRATED IN THE STREAMING CYTOPLASM IN JUST-FERTILIZED EGGS. EVENLY PARTITIONED DURING CLEAVAGE AMONG ALL GLASTOMERES. ABSENT IN THE YOLK CELL DURING CLEAVAGE, BLASTULA AND GRASTRULA STAGES. DISTRIBUTED HOMOGENEOUSLY AMONG ALL CELLS OF THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DVR-1 protein precursor.
VG1 OR DVR1 OR DVR-1.
Brachydanio rerio (Zebrafish) (IEukaryota; Metazoa; Chordata; Canctinopterygii; Neopterygii; TeiCyprinidae; Danio.
NCBI_TaxID=7955;
EMBL; U00931; AAC27347.1; -.
HSSP; P12643; 3BMP.
ZFIN; ZDB-GENE-980526-389; dvr1.
InterPro; IPR002400; GF_cysknot.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide; 1.
PRINTS; PR00438; GFCYSKNOT.
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MEDLINE=94009920; PubMed=8405668;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                              GASTRULA.
SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
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larity 43.2%;
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SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1;
Growth factor; Mitogen; Glycop
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47;
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                                                                                          40201 MW;
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POTENTIAL.
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BY SIMILARITY.

INTERCHAIN (BY SIMILARITY).

N-LINKED (GLCNAC. . .) (POTENTIAL).

N-LINKED (GLCNAC. . .) (POTENTIAL).
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                 Q9tsy2 sus scrofa
Q9gm97 equus cabal
Q95j86 macaca fasc
Q8uwd8 columba liv
Q8uwd7 coturnix ch
Q98sp0 gallus gall
Q8uwd9 anser anser
Q8uwd9 anser anser
Q8uwe0 anas platyr
Q8wns6 bos taurus
Q95n11 capra hircu
Q9mz18 ovis aries
Q90yy0 ictalurus p
Q90w05 sparus aura
                                                                                                         Description
Q9ddi8
Q90zd2
Q90zd1
     5 sparus aura
8 salmo salar
2 oncorhynchu
 oncorhynchu
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Q9TSY2
ID Q9
AC Q9
DT 01
                         Query Match
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650	097138 brugia mala	9ygv1	9w6t9 brachyda	9dge6	9dgf0	9dg	9pwr8	90261	9dge9	95md6	91350	8qh11	95mf3 s	V4f4	9xz62 (90z79 ictalu	98ty4	xs86 equus c	9bg54 sus sc	8дд53 вра	9w7	98ub3 salveli	98tb3	30v	90w17 salmo sa	90wc8 morone	M06	86	

ALIGNMENTS

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SEQUENCE FROM N.A.

MEDLINE=20078370; PubMed=10612246;

Stratil A., Kopecny M.;

"Genomic organization, sequence and polymorphism of myostatin (GDF8; MSTN) gene.";

Anim. Genet. 30:468-470(1999).

-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.

EMBL; AJ237920; CAB40844.1; -.

HSSP; P18075; 1BMP.

InterPro; IPR002400; GF cysknot.

InterPro; IPR001839; TGFb N.

Pfam; PF00019; TGF-beta; 1.

Pfam; PF00019; TGF-beta; 1.

PRINTS; PR00438; GFCYSKNOT.

PRODOm; PD000357; TGFB; 1.

SMART; SM00204; TGFB; 1.

PROSITE; PS00250; TGFB; 1.

Glycoprotein.

1 1

SEQUENCE 162 AA; 18290 MW; FE353334512856E CRC6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9TSY2;
Q9TSY2;
01-MAY-2000 (
01-MAY-2000 (
01-JUN-2002 (
Myostatin (Fr
                                                                                                                                                                                                                                                                                                                                                                                                                                        Sus scrofa (Pig).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae;
NCBI_TaxID=9823;
   al Simil
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100.0%;
larity 100.0%;
Conservative (
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Last sequence update)
Last annotation update)
   0;
                 Score 629; DB 6;
Pred. No. 1e-65;
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   Mismatches
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                                   Length 162;
  Indels
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Sus.
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   Gaps
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RESULT

Q9GM97

Q9GM97
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Best Local s
Matches 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Molecular cloning of equine myostatin in horse.";
Submitted (OCT-1999) to the El-!-SIMILARITY: BELONGS TO THIEMBL; AB033541; BAB16046.1; -HSSP; P18075; 1BMP.
InterPro; IPR002048; EF-hand.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb.
InterPro; IPR001111; TGFb.
Pfam; PF00019; TGF-beta; I.
Pfam; PF00019; TGF-beta; I.
SMART; SM00204; TGFB; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00018; EF HAND; UNIPROSITE; PS000250; TGF_BETA_1;
Glycoprotein.
SEQUENCE 375 AA; 42736 MW;
                                                                                                                                                                                                                               Q95J86;
Q95J86;
01-DEC-2001
01-DEC-2001
01-JUN-2002
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Q9GM97;
01-MAR-2001
01-MAR-2001
01-JUN-2002
MYOSTATIN.
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Mammalia; Eutheria; Perissodactyla;
NCBI_TaxID=9796;
                                                         Eukaryota; Metazoa; Cho:
Mammalia; Eutheria; Pri:
Cercorithecinae; Macaca
NCBI_TaxID=9541;
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SEQUENCE FROM N.A.
STRAIN=THROUOGHBRED;
                                                                                                                                                                            Macaca fascicularis
                                                                                                                                                                                                         Myostatin.
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   EQUENCE
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al Similarity 100.0%;
109; Conservative 0
FROM N.A.
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                                                                                                      (Crab eatı
Chordata;
Primates;
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16,
21,
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                                                                                                                                                                            eating macaque)
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styla; Equidae; Equus.
                                                                                                                  Craniata; Vertebrata; Euteleostomi; Catarrhini; Cercopithecidae;
                                                                                                                                                                                                                                                                                                                                                      PRT;
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Pred. No. 2.4e-65;
Mismatches 0;
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InterPro; IPR001111; TGFb_N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb_propeptide; 1.
ProDom; PD000357; TGFb; 1.
PROSITE; PS00018; EF_HAND; UNKNOWN 1.
PROSITE; PS00250; TGF_BETA_1; UNKNOWN Glycoprotein.
SEQUENCE 375 AA; 42722 MW; 2149B4
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Smock S.L.,
"Cloning of
(cynomolgus
Submitted (S
                                                                                                                                                                                                                                                                                                                                       Columba livia
Eukaryota; Ma
Archosauria;
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Q8UWD8;
01-MAR-2002
01-MAR-2002
01-JUN-2002
                                                                                                                                    SMART; SM
PROSITE;
PROSITE;
SEQUENCE
                                                                                                                                                                             InterPro; IF
Pfam; PF0001
Pfam; PF0068
ProDom; PD00
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Submitted
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InterPro;
                                                                                                                                                                                                                                                                               "Molecular
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                                                                                                                                                                                                                                                 EMBL;
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SEQUENCE FROM N.A.
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VHQANI
                                            DFGLD
                                                                  DECLDO
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                    VHQANI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                             , Yang W., Cheng Z., Li H., Zhu D.; cular Cloning and Tissue Distribution of Goose, Pigeon and Quail."; tted (OCT-2001) to the EMBL/GenBank/DDBJ AF440863; AAL35277.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        109;
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SM00204; TGFB; 1.
E; PS00018; EF HAND; UNKNOWN 1.
E; PS00250; TGF BETA 1; UNKNOWN 1.
                                                                                       109; Conserv
                                                                                                                                                                              ro; IPR002048; EF-hand.
ro; IPR001839; TGFb.
ro; IPR0011111; TGFb_N.
PF00019; TGF-beta; 1.
PF00688; TGFb_propeptide; 1
PD000357; TGFb; 1.
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PRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109
                                           CDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
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, Owen T.A.;
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                                                                                        100.0%; Score 629; DB 13; larity 100.0%; Pred. No. 2.4e-65; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 629; DB 6; larity 100.0%; Pred. No. 2.4e-65; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                       a (Domestic pigeon).
etazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Aves; Neognathae; Columbiformes; Columbidae; Columba
                                                                                                                                                                                                                                                                                                                                                                                               20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1; UNKNOWN 1.
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                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2149B46AC7D446E7
                                                                                                                                     88296FOAE779476E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                            375
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                                                                                                                                                                                                                                                                                   the Myostatin
                                                                                                                                                                                                                                                              databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 375;
                                                                                         Indels
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                                                                                                                                                                                                                                                                                    Gene
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RESULT 5
Q8UWD7
ID Q8UW
AC Q8UW
DT 01-W
DT 01-W
DT 01-W
OC GATCH
OC COTU
OC ATCH
OC COTU
OC SEQUE
RN [1]
RN [1]
RP SEQUE
RN [1]

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Best Local S
Matches 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gu Z., Yang W., Cheng Z., Li H., Zhu D.;
"Molecular Cloning and Tissue Distribution of the Myostatis
Duck, Goose, Pigeon and Quail.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF440864; AAL35278.1; -.
InterPro; IPR002048; EF-hand.
InterPro; IPR001131; TGFb N.
Pfam; PF00019; TGF-beta; I.
Pfam; PF00688; TGFb propeptide; 1.
Pfam; PF00688; TGFb propeptide; 1.
PROSITE; SM00204; TGFB; 1.
PROSITE; PS00018; EF HAND; UNKNOWN 1.
PROSITE; PS000250; TGF BETA 1; UNKNOWN 1.
PROSITE; PS00250; TGF BETA 1; UNKNOWN 1.
development.";
Submitted (FEB-2001) to the EI
-!- SIMILARITY: BELONGS TO TH
EMBL; AF346599; AAK18000.1; -
HSSP; P18075; 1BMP.
InterPro; IPR002048; EF-hand.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb_N.
                                                                                                                                                                               SEQUENCE FROM N.A. Shang Y., Yang W., Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q8UWD7;
Q8UWD7;
Q1-MAR-2002
01-MAR-2002
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                   Q98SP0;
Q98SP0;
01-JUN-2001
01-JUN-2001
01-JUN-2002
Myostatin.
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MSTN.
Coturnix chinensis.
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                                                                                                                                                                                                                                                                                                                 Gallus gallus (Chic
Eukaryota; Metazoa,
Archosauria; Aves;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Archosauria; Aves; Neognathae; Galliformes; Phasian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TaxID=46218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VHQANPRGSAGECCTETKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
                                                                                                                                                                                                                                                                               TaxID=9031;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              n 100.0%;
Similarity 100.0%;
09; Conservative 0
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                                                                                                                                                                                                                                                                                                                                          Metazoa;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                   (Chicken).
:azoa; Chordata; |
Nves; Neognathae;
                                                                                                                                                                                           and
                                                                                                                                                                                                                 Zhu D.;
                    TGFb.
                                                               EF-hand.
                                                                                                                                                                                         expression of the chicken GDF-8
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                                                                                                                              EMBL/GenBank/DDBJ
HE TGF-BETA FAMIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 629; DB 13; Pred. No. 2.4e-65; Mismatches 0;
                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi;
; Galliformes; Phasianidae; Phasiani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
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RESULT
Q8UWE0
ID Q8
AC Q8
DT 01
DT 01
DT 01
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QBUWD9
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Pfam; PF00688; TGFb_propeptide; 1.
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00018; EF_HAND; UNKNOWN_1.
PROSITE; PS00250; TGF_BETA_1; 1.
Glycoprotein.
SEQUENCE 375 AA; 42717 MW; D980E286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAR-2002
01-MAR-2002
01-JUN-2002
Q8UWE0;
Q8UWE0;
01-MAR-2002
01-MAR-2002
01-JUN-2002
                                                                                                                                                                                                                                       PROSITE;
PROSITE;
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QBUWD9;
                                                                                                                                                                                                                                                                                                                                                   Gu Z., Yang W., Cheng Z., Li H., Zhu D.; "Molecular Cloning and Tissue Distribution of the Myostatin Gene in Duck, Goose, Pigeon and Quail."; Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases. EMBL; AF440862; AAL35276.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                              Anser anser (domestic goose).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Anseriformes; Anatidae; Anser.
NCBI_TaxID=8843;
                                                                                                                                                                                                                                                                                          InterPro; IPR002048; EF-hand. InterPro; IPR001839; TGFb. InterPro; IPR001111; TGFb N. Pfam; PF00019; TGF-beta; 1. Pfam; PF00688; TGFb propeptid
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MSTN.
                                                                                                                                                                                                                                                                       ProDom; PD0003
SMART; SM00204
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                                                                                                   108;
                                                                                                                                                                                           108;
                                                                                                                                                                                                      h 99.2%; Score 624; DB 13; Length 375; Similarity 99.1%; Pred. No. 9.2e-65; 08; Conservative 0; Mismatches 1; Indels
                                                                                                                                                                                                     Similarity
(TrEMBLrel. 20, (TrEMBLrel. 20, (TremBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel. 20, Created)
(TrEMBLrel. 20, Last sequence update)
(TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                           Conservative
                                            PRELIMINARY;
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                                                                                                                                                                                                                                                                                 TGFb propeptide; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           42717 MW; D980E286426E4D4F CRC64;
                                                                                                                                                                                        99.0%; Score 623; DB 13; Length 375; 99.1%; Pred. No. 1.2e-64; ive 0; Mismatches 1; Indels
 Created)
Last sequence update)
Last annotation update)
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                                              375 AA
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P SEQUENCE FROM N.A.

A Gu Z., Yang W., Cheng Z., Li H., Zhu D.;

A Gu Z., Yang W., Cheng Z., Li H., Zhu D.;

A Gu Z., Yang W., Cheng Z., Li H., Zhu D.;

A Gu Z., Yang W., Cheng Z., Li H., Zhu D.;

A Gu Z., Yang W., Cheng Z., Li H., Zhu D.;

A Gu Z., Yang W., Cheng Z., Li D.;

A Gu Z., Yang W., Cheng Z., Li D.;

A Gu Z., Yang W., Cheng Z., Li D.;

T Gu Z., Yang W., Cheng Z., Li D.;

T Molecular Cloning and Tissue Distribution of the Myostatin Gene in The Color of the Myostatin Gene in The Myostatin Ge
                                                                                                                                                                              SEQUENCE FROM N.A.

Shibata M., Muramoto T., Aikawa K.;

Shibata M., Muramoto T., Aikawa K.;

"Genomic organization and sequence of the

Submitted (DEC-2001) to the EMBL/GenBank/I

EMBL; AB076403; BAB79498.1; -.

InterPro; IPR002048; EF-hand.

InterPro; IPR001139; TGFb.

InterPro; IPR001111; TGFb N.

Pfam; PF00019; TGF-beta; I.

R Pfam; PF00688; TGFb propeptide; 1.

R PF0Dom; PD000357; TGFb; 1.

R SMART; SM00204; TGFB; 1.

R PROSITE; PS00018; EF HAND; UNKNOWN 1.

PROSITE; PS000250; TGF BETA 1; UNKNOWN 1.

PROSITE; PS00250; TGF BETA 1; UNKNOWN 1.
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Best Loc
Matches
                                                                                                  Query Match 98.3%;
Best Local Similarity 98.2%;
Matches 107; Conservative
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Q8WNS6;
01-MAR-2002
01-MAR-2002
01-JUN-2002
Myostatin.
GDF8.
Bos taurus (F
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MSTN.
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Archosauria; Ave
NCBI_TaxID=8839;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bovidae; Bovinae;
NCBI_TaxID=9913;
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Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               267
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DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
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a; Aves; N
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Neognathae; Anseriformes; Anatidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Domestic duck)
Chordata; Cran
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
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99.1%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Aikawa K.;

Id sequence of the myostatin gene the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 621; DB 13;
Pred. No. 2.1e-64;
0; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
Last sequence up
Last annotation
                                                                                                Score 618; DB 6; Pred. No. 4.6e-64; 1; Mismatches 1;
                                                                                                                                                                                                                                0EC27616C202F5E6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence update)
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                                                                                                                                                              Length 375;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109
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RESULT 10
Q95N11
ID Q95N1
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Q9MZ18
  DRACE RAP OCCUPANTION OCCUPANT
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Best Local
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MSTN.
Capra hircus (Goat).
Eukaryota; Metazoa; Ch
Mammalia; Eutheria; Ce
Bovidae; Caprinae; Cap
NCBI_TaxID=9925;
                                                                                                                                                                                                                                                                                                            Q9MZ18;
Q9MZ18;
01-OCT-2000
01-OCT-2000
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Q95N11;
Q1-DEC-2001
Q1-DEC-2001
Q1-JUN-2002
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NON_TER
NON_TER 1
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                   SEQUENCE FROM N.A.

Lian Z., Jin H., Li N.;

"Cloning of intron 2 of the myostatin gene in sheep.";

Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases

-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
                                                                                                                                                        Eukaryota; Metazoa; Chor
Mammalia; Eutheria; Ceta
Bovidae; Caprinae; Ovis.
NCBI_TaxID=9940;
                                                                                                                                                                                                                                                 Ovis aries
                                                                                                                                                                                                                                                                  Myostatin (F)
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  EMBL;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCG 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEGLDCDI
AF2667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96.3%; Score 606; DB 6; Similarity 97.2%; Pred. No. 5.7e-63; D4; Conservative 2; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pan
                                                                                                                                                                                                   ; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pan Q., Chen H., Jin H., Li N.;
of intron 2 of the myostatin gene in goat.";
(APR-2001) to the EMBL/GenBank/DDBJ databases.
RITY: BELONGS TO THE TGF-BETA FAMILY.
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185
185 AA;
                                                                                                                                                                                                                                             (Sheep).
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intron 2 o
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(TrEMBLrel. 19, Last sequence update)
(TrEMBLrel. 21, Last annotation update)
 TY: BELONGS TO T
58; AAF78069.1;
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                                                                                                                                                                                                                                                                                           ragment).
                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGFb_propeptide; 1.
57; TGFb; 1.
50; TGF_BETA_1; UNKNOWN_1
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20953 MW; 03675B386E9D64D4 CRC64;
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                                                                                                                                                                                                                                                                                                               Created)
Last sequence update)
Last annotation update)
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RESULT 13
Q90W05
ID Q90W0
AC Q90W0
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Q90YY0
ID Q9
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Best Local S
Matches 103
                                                                                                                                                                                                                                                                                                         Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=7998;
[1]
SEQUENCE FROM N.A.
Kocabas A.M., Liu Z.J.;
Kocabas A.M., Liu Z.J.;
"Molecular characterization and expression of the channel catfish (Ictalurus punctatus).";
Submitted (JUL-2001) to the EMBL/GenBank/DDBJ da-i-SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
EMBL; AF396747; AAK84666.1; -.
InterPro; IPR001839; TGFb.
InterPro; IPR001839; TGFb.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb propeptide; 1.
Pfam; PF00688; TGFb propeptide; 1.
PROSITE; PS00250; TGF_BETA_1; UNKNOWN_1.
Glycoprotein.
SEQUENCE 389 AA; 43600 MW; 569FB952B7E9E173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q90YY0;
Q90YY0;
Q90YY0;
O1-DEC-2001 (TrEMBLrel. 19, Created)
O1-DEC-2001 (TrEMBLrel. 19, Last sequence
O1-JUN-2002 (TrEMBLrel. 21, Last annotation
Myostatin.
Ictalurus punctatus (Channel catfish).
Eukaryota; Metazoa; Chordata; Craniata; Ve Actinopterygii; Neopterygii; Teleostei; Os Ictaluridae; Ictalurus.
NCBI_TaxID=7998;
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InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb.N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF000688; TGFb_propeptide; 1
ProDom; PD000357; TGFb; 1.
SMART; SM00204; TGFB; 1.
PROSITE; PS00250; TGF_BETA_1; 1.
Glycoprotein.
NON_TER 185 185
SEQUENCE 185 AA; 20923 MW; BA
Q90W05
                                                                                                                                 343
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al similarity 96.3%;
103; Conservative
                                                                                                                                                                                                                                                                                                        sh 90.6%;
Similarity 90.7%;
97; Conservative
                   PRELIMINARY;
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                                                                                                                                                                                                                                                                                                        Score 570; DB 1
Pred. No. 2e-58;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                 569FB952B7E9E173
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Ostariophysi; Siluriformes;
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Q9DDI8
ID Q9
AC Q9
DI Q9
DI Q9
OI Q9
OI Q1
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Q9DDI8;
01-MAR-2001 (TrEMBLr;
01-OCT-2001 (TrEMBLr;
01-JUN-2002 (TrEMBLr;
Myostatin precursor.
GDF-8.
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Pfam; PF00688; TGF]
ProDom; PD000357; PROSITE; PS00250; Glycoprotein.
SEQUENCE 385 AA;
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01-JUN-2002
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Ostbye T.
Andersen
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SEQUENCE F
Andersen O
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                                                                                                                                                                                                                                                                                                                                                         Salmo salar (Atlantic salmon).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei;
Protacanthopterygii; Salmoniformes; Salmonidae; Salmo.
NCBI_TaxID=8030;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Characterization of the myostatin gene in the gilthead Sparus aurata: sequence, genomic structure, and expressi Submitted (APR-2000) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Perciformes; Percoidei;
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Maccatrozzo L., Bargellor
Patarnello T.;
"Characterization of the
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Sparidae; Sparus.
NCBI_TaxID=8175;
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T.K., Galloway T.F., Nielsen C., Gabewo myostatin genes of Atlantic salmon sed in a variety of tissues.";
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              myostatin genes of Atlantic salmon
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Pred. No. 4.4e-58;
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EMBL; AJ297267; CAC19541.2; -.

EMBL; AJ316006; CAC59700.1; -.

HSSP; P12643; 3BMP.

InterPro; IPR001839; TGFb.

InterPro; IPR001111; TGFb.N.

Pfam; PF00019; TGF-beta; 1.

Pfam; PF00688; TGFb propeptide; 1.

SMART; SM00204; TGFB; 1.

SMART; SM00204; TGFB; 1.

PROSITE; PS00250; TGF BETA 1; 1.

Glycoprotein; Signal.

CHAIN

265 373 MYOSTATIN.
                                                                                                                        Rescan P.-Y., Jutel I., Ralliere C.;
"Two myostatin genes are differentially expressed in of the trout (Oncorhynchus mykiss).";
J. Exp. Biol. 0:0-0(2001).
-!- SIMILARITY: BELONGS TO THE TGF-BETA FAMILY.
EMBL; AF273035; AAK71707.1; -.
InterPro; IPR001839; TGFb.
InterPro; IPR001111; TGFb N.
Pfam; PF00019; TGF-beta; 1.
Pfam; PF00688; TGFb propeptide; 1.
PROSITE; PS00250; TGF_BETA_1; UNKNOWN_1.
Glycoprotein.
SEQUENCE 373 AA; 42049 MW; 9DD4771B5CF671EA CRC64
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Q90ZD2;
01-DEC-2001 (
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Myostatin 1.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleost
Actinopterygii; Neopterygii; Teleostei; Euteleostei;
Protacanthopterygii; Salmoniformes; Salmonidae; Oncorhynchus
NCBI_TaxID=8022;
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KW Vacc
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PM WO2C
XX
PM Inc:
PM Inc: Increasing regulating WPI; 20-JUL-1999; 26-JUL-1999; Homo sapiens Synthetic. Human growth AAB20141; Halkier 20-JUL-2000; 25-JAN-2001. WO200105820-A2. Growth 30-APR-2001 AAB20141 vaccine; (MEBI-) 2001-112 differentiation factor 8; GDF-8; myostatin; down-regulation; ; muscle; meat; cachexia; cardiant; human; mutant; mutein. ጽ አ Ŧ, standard; Protein; 109 AA. th Mouritsen S, E BIOTECH AS. 680/12. e muscle mass of animals used in meat production by down owth differentiation factor 8 (GDF-8) activity in the differentiation factor 8 C-terminal region. 2000WO-DK00413. (first 99DK-0001014. 99US-0145275. entry) Klysner S;

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RESULT 2
AAM51935
ID AAM5
XX AAM51935
XX AAM5
AC AAM5
AC AAM5
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DT 01-F
XX Huma
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PN 30-N
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CC (CDF-8), i.e. residues 267-375 of the full-length protein (see
CC (ADF-8), i.e. residues 267-375 of the full-length protein (see
CC (ADF-8), i.e. residues 267-375 of the full-length protein (see
CC (ADF-8), i.e. residues 267-375 of the full-length protein (see
CC (ADF-8), i.e. residues 267-375 of the full-length protein (see
CC (ADF-8), i.e. residues 267-375 of the full-length protein (see
CC (ADF-8), i.e. residues of this region is thought to be the
CC (ADF-8), i.e. regulation of GDF-8. It is an object of the
CC (ADF-8) in which a produce a recombinant therapeutic vaccine capable of
CC (ADF-8) in which a portion of the native sequence is replaced by a
CC (ADF-8) in which a portion of the native sequence is replaced by a
CC (ADF-8) in which a portion of the native sequence is replaced by a
CC (ADF-8) in which a portion of the native sequence is replaced by a
CC (ADF-8) in which a portion of the native 3-dimensional
CC (ADF-8) in which a possible sites in which the T-cell epitope can be
CC (ADF-8) in the protein. Nucleic acids encoding the GDF-8 variants
CC (ADF-8) activity can increase muscle mass by up to at least 45% in
CC (ADF-8) can be used for genetic immunisation of the animals. Down-regulation
CC (ADF-8) activity can increase muscle mass by up to at least 45% in
CC (ADF-8) can be used to
CC (ADF-8) can 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; TGFbeta; transforming growth factor beta; mutant; antagonist; agonist; ectopic bone formation; psoriasis; muscular atrophy; scar; formation; fibrosis; cirrhosis; osteopathic; antipsoriatic; antifibrotic; hepatotropic; vulnerary; GDF8.
                                                                        Sebald W,
                                                                                                                                                                                                                       30-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
      WPI; 2002;042559/06
                                                                                                                                                                                                                                                                                                                                                                       06-DEC-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                               DE10026713-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAM51935 standard; protein; 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              animal through induction of anti-GDF-8 antibody production
                                                                                                                                                                                                                                                                                                30-MAY-2000; 2000DE-1026713.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-FEB-2002
                                                                                                                                                 (SEBA/) SEBALD W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens.
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                                                                          Nickel J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 629; DB 22; larity 100.0%; Pred. No. 2.8e-60; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                          2000DE-1026713.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein superfamily
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RESULT 3
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Best Local
                                                                                                                                            WPI; 199
Q-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present invention relates to muteins of a chain of a protein which, when in the form of a homodimer, has antagonistic or partial agonistic activity, and where the mutation results in the protein binding with low affinity to its receptor. The protein is a member of the transforming growth factor beta (TGFbeta) superfamily. The mutant sequences of the invention can be used in the treatment of diseases associated with the overexpression of TGFbeta family proteins, including ectopic bone formation, psoriasis, muscular atrophy, scar formation, fibrosis and cirrhosis. The present sequence is the human GDF8 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New mutein of transforming growth useful for treating or preventing for receptor binding -
                                                                                                                                                                                                                                                                                                                                                                      Growth differentiation factor-8; GDF-8; cell proliferation; adipocyte; obesity; transforming growth factor-beta.
                                     GDF-8 can be used improve efficiency
                                                                                                                                                                                                                                                                                                                                                Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                Mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                            related to
                                                                             Disclosure;
                                                                                                       New growth differentiation factor 8 - useful for treatment diagnosis of cell proliferative disorders esp. of muscle.
                                                                                                                                                                                                                                         19-MAR-1993;
                                                                                                                                                                                                                                                                  18-MAR-1994;
                                                                                                                                                                                                                                                                                             29-SEP-1994
                                                                                                                                                                                                                                                                                                                      WO9421681-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                           23-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR63161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure;
                                                                                                                                                                                      Lee S,
                                                                                                                                                                                                               Oran)
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                                                                                                                                            1994-316943/39.
DB; Q76380.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEGLDCD
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                                                                                                                                                                                                                                                                                                                                                                                                               growth
                                                                                                                                                                                                               VIND
                                                                                                                                                                                    Mcpherron AC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        109 AA;
                            abnormal
                                                                            Page 41; 84pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fig 6; 54pp; German.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 629; DB 23; larity 100.0%; Pred. No. 2.8e-60; Conservative 0; Mismatches 0;
                      used to maintain cells before transplantation; to ciency of cell fusion and to treat obesity or diseases bnormal adipocyte proliferation.
                                                                                                                                                                                                               JOHNS HOPKINS SCHOOL MED.
                                                                                                                                                                                                                                                                                                                                                                                                                differentiation factor-8 partial sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                            (first
                                                                                                                                                                                                                                          93US-0033923.
                                                                                                                                                                                                                                                                   94WO-US03019.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                           entry)
                                                                            English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                126
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        factor-beta superfamily protein, e.g. ectopic bone formation, com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 109;
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26 AA;

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RESULT 4
AAW69883
ID AAW6
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This is the amino acid sequence of the C-terminal portion of mouse C growth differentiation factor-8 (GDF-8), a novel member of the C transforming growth factor-beta superfamily that appears to relate C to various cell proliferative disorders, especially those involving C muscle, nerve and adipose tissue. The sequence was deduced from a C partial genomic clone (see AAV45809). A full-length sequence (see C AAW30689) has been deduced from a cDNA clone (see AAV42113). The C invention provides novel mammalian and avian GDF-8 proteins (see C GDF-8 expression is disrupted or interfered with. Also claimed C are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb C from these animals; (2) method for increasing muscle mass in contained to GDF-8; (3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best
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                                                                                                                                                                                                                                                                                                                             23-MAY-1997;
05-FEB-1997;
28-APR-1997;
                                                                                                                                                                                                                                              WPI; 19:
N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus
8
                                                                                                                                                                                 disrupted - have increased muscle and reduced cholesterol contents, also use of GDF-8 inhibitors for treating cancer, obesity, neuromuscular disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Growth differentiation factor-8; transforming growth factor-beta; neuromuscular disease; muscular of
                                                                                                                                                                                                                                                                                  Lee
                                                                                                                                                                                                                                                                                                                                                                           05-FEB-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein
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)B; AAV45809.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
I Similarity 100.0%;
109; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 growth differentiation
                                                                                                                                                                 2;
                                                                                                                                                                                                                                                                                 McPherron AC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard;
                                                                                                                                                                  Page 58;
                                                                                                                                                                                                                                                                                                        SNHOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first
                                                                                                                                                                                                                                                                                                                            97US-0862445.
97US-0795071.
97US-0847910.
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13..14
16..17
17..126
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                                                                                                                                                                                                                                                                                                        HOPKINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entry)
                                                                                                                                                                 125pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                             "mature
                                                                                                                                                                 English.
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Pred. No. 3.3e-60;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                factor-8 C-terminal fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                              polypeptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; muscle; m
dystrophy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GDF-8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mouse; transgenic; meat; inhibitor; hv: cachexia; AIDS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    obesity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         animal;
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RESULT 5
AAY15386
ID AAY1
XX AAY1
XX AAY1
XX AAY1
XX AAY1
XX OB-I
XX C-te
XX Grow
KW Gell
KW Gell
KW Cell
Clea
FT Clea
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                             New differen
diseases
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                                                                                                       WPI; 1999-49
N-PSDB; AAZO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cleavage-sit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C-terminal r
                                                                                                                                                                                                                                                                                                  28-JUL-1998;
05-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cleavage-sit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  transforming
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                                                                                                                                                                                                                                                                                                                                                                                 05-FEB-1999;
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                                                                                                                                                                                                                                               (UYJO)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         78
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 degener
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       h differentiation differentiation; a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEGLOCO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEGLDCD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Simi
                                                                                                                                                                                                                                               VIND
                                                                                                                                                                                           McPherron AC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         standard; Protein; 126 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \vdash
                                                                                                             )4289/41.
)6446.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rentiation factor; tissue growth; muscle growth; ntiation; animal feed; muscle disorder; ation; nerve degeneration; GDF-8; development; growth factor beta; TGF-beta.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 629; DB 19; larity 100.0%; Pred. No. 3.3e-60; Conservative 0; Mismatches 0;
                                                      tiation factor useful for treating neurodegenerative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         egion of mouse Growth Differentiation Factor-8 (GDF-8).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26 AA;
                                                                                                                                                                                                                                                 JOHNS HOPKINS SCHOOL MEDICINE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                  98US-0124180.
98US-0019070.
                                                                                                                                                                                                                                                                                                                                                                                 99WO-US02511.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /label= Potential proteolytic cleavage site
/note= "cleavage generates mature protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16..17
/label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Potential_proteolytic_cleavage_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
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proteory protein. The processing sites.

C proteolytic processing sites.

C proteolytic processing sites.

C cleavage of the precursor at the second of these sites would general cleavage of the precursor at the second of these sites would general cleavage of the precursor at the second of these sites would general cleavage of the precursor at the second of these sites would general cleavage of the precursor at the second of the second clear weight of 12,400.

C animals and forms of animal feed that can inhibit/reduce production of comparison of commercial interest.

C GDF-8 are of commercial interest.

C GDF-8 expression may also have a role in the therapy of abnormal growth of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8 entisense molecule or dominant negative polypeptide could be used with cotal or adult muscle cells, bone cells or progenitor cells. These clears or adult muscle cells, bone cells or progenitor cells. These can be administered to a patient suffering from a disorder such as muscle wasting disease, neuro muscular disorder, muscle atrophy, osteoporosis, bone degenerative diseases, obesity or other adipocyte
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RESULT 6
AAB73182
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Best Local S
Matches 109
                                                                                  WPI; 200
N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexi neurodegenerative disease; amyotrophic lateral sclerosis; obesity; muscular dystrophy; musculodegenerative disease; tissue repair; muscle wasting disease; neuromuscular disorder; spinal cord injury; traumatic injury; congestive obstructive pulmonary disease.
           New substantially purified growth differentiation factor-8 polypeptide, useful for treating muscle wasting disease, obesity, muscular dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
                                                                                                                                                                                                                                                                                                                                                     Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Murine GDF-8
                                                                                                                                                                                                                                           17-AUG-2000;
                                                                                                                                                                                                         19-AUG-1999;
                                                                                                                                                                                                                                                                                22-FEB-2001.
                                                                                                                                                                                                                                                                                                                 WO200112777-A2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              is the amino acid sequence of the C-terminal region of the GDF-8 arear protein. The predicted GDF-8 sequence contains two potential
                                                                                   2001-211209/21.
)B; AAF63547.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              109;
                                                                                                                                                                       UNIV JOHNS HOPKINS SCHOOL MEDICINE
                                                                                                                                     McPherron AC;
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Similarity 100.0%;
09; Conservative (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #1.
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                                                                                                                                                                                                         9905-0378238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  138pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 629; DB 20;
Pred. No. 3.3e-60;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      cachexia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
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                                                                                                                      Query Match
Best Local S
Matches 109
                                                                                                                                                                                                                  injury, (COPD),
                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                 treating
                                                                                                                                                                                                                                                                                                            adipocytes.
                                                                                                                                                                                                                                                                                                                                          muscular dystrophy),
                                                                                                                                                                                                                                                                                                                                                                                                                                   Example
                                                                                                                                                                                                                                                                                gene therapy
                                                                                                                                                                                                                                                                                              organ
                                                                                                                                                                                                                                                                                                                                                          neurodegene
                                                                                                                                                                                                                                                                                                                                                                          which
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                                                                                                                                                                                                                                                                                                                                trauma,
                                                                                                                                                                                                        ing sequences and proteins. The present sequence is a GDF-8 protein, ch was isolated in the present invention. GDF-8 is useful for treating rodegenerative diseases (e.g. amyotrophic lateral sclerosis and cular dystrophy), musculodegenerative diseases or in tissue repair due trauma, obesity and disorders related to abnormal proliferation of pocytes. GDF-8 is also useful for treating malignancies of the various an systems, particularly cells in muscle or adipose tissues and in a therapy for the treatment of cell proliferative or immunological sases mediated by GDF-8. In addition, GDF-8 is also useful for iting muscle wasting disease, neuromuscular disorder, spinal cord iry, traumatic injury, congestive obstructive pulmonary disease pD), AIDS or cachexia.
                             VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109
VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 126
                                                              DEGLDCI
                                                                                             DEGLDCI
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                                                                                                                                       Sim:
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                                                           DEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
                                                                                                                                        ilarity
                                                                                                                                                                                      126 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Fig 2; 124pp; English.
                                                                                                                         100.0%;
larity 100.0%;
Conservative 0;
                                                                                                                       0;
                                                                                                                                     Score 629; DB 22;
Pred. No. 3.3e-60;
                                                                                                                          Mismatches
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                                                                                                                          Indels
                                                                                                                                                      Length 126;
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AAB73189
RESULT
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                                                                                                                                                                                                                                                     Rat GDF-8.
                                                                                                                                                                                                                                                                                  AAB73189;
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                                                                                                                                                                                                                                                                                                  AAB73189
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                                                                                                                                                                                                                                                                                                  andard;
                                                                                                                                                                                                                                                                   (first
                                                                                                                                                                                                                                                                                                  Protein;
                                                                                                                                                                                                                                                                    entry)
                                                                                                                                                                                                                                                                                                  130 AA.
                                                                                                                                                                                                                                     cachexia;
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WPI; 200 N-PSDB;

2001-211209/21. DB; AAF63555.

AAF

Lee

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McPherron AC;

19-AUG-1999

9908-0378238

(UYJO) UNIV

JOHNS HOPKINS SCHOOL MEDICINE.

17-AUG-2000

2000WO-US22884.

22-FEB-2001

WO200112777

-A2

dystrophy, rand cachexia

The present

invention relates to growth differentiation factor-8 (GDF-8)

Example

Fig 2;

124pp;

English.

New substantially purified growth differentiation factor-8 polypeptide, useful for treating muscle wasting disease, obesity, muscular dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome

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Matches 109
                                                                                                                                                                                                                                                                                                                                                 Chimeric
Chimeric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     which was isolated in the present invention. GDF-8 is useful for treating neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and muscular dystrophy), musculodegenerative diseases or in tissue repair due to trauma, obesity and disorders related to abnormal proliferation of adipocytes. GDF-8 is also useful for treating malignancies of the various organ systems, particularly cells in muscle or adipose tissues and in gene therapy for the treatment of cell proliferative or immunological diseases mediated by GDF-8. In addition, GDF-8 is also useful for treating muscle wasting disease, neuromuscular disorder, spinal cord injury, traumatic injury, congestive obstructive pulmonary disease (COPD), AIDS or cachexia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                      cardiant;
                                                                                                                                                                                                                                                                                                                                                                                              Growth differentiation factor 8;
T-cell epitope; down-regulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAB20153 standard; Protein;
                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                               Region
                                                                                                                                                                                                                                                                                                                                       Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-APR-2001
                      20-JUL-1999;
26-JUL-1999;
                                                                                                                                           Misc-difference
                                                                                                                                                                                                                 Region
                                                                                                                                                                                                                                        Region
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                                                        20-JUL-2000;
                                                                                  25-JAN-2001
                                                                                                         WO200105820-A2,
(MEBI-) M & E
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    109;
                                                                                                                                                                                                                                                                                                                                                                                                                                    differentiation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
Similarity 100.0%;
19; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                      human;
                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    130 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                         2000WO-DK00413.
BIOTECH AS
                    99DK-0001014
99US-0145275
                                                                                                                                                                              124
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52..16
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/note=
                                                                                                                                                                                                                                                                 16..36
                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                           141..142
                                                                                                                                                                                                                                                                                                                                                                                    mutant; mutein.
                                                                                                                                'note=
                                                                                                                                                                  'note=
                                                                                                                                                                                                                                                     note=
                                                                                                                                                                                                      note=
                                                                                                                                                                                                                   160
                                                                                                                                                     "Cys-124 may be disulfide bond
                                                                                                                                                                                                                                                                                                                                                   tetani.
                                                                                                                                                                                                                                                                                                                                                                                                                                     factor
                                                                                                                                                                                                                            "tetanus toxoid P2 epitope"
                                                                                                                                                                                          "identical to residues 267-375 of human GDF-8"
                                                                                                                                                                                                                                                     "tetanus
                                                                                                                                                                                                                                                                             "identical to residues 215-230 GDF-8"
                                                                                                                                "optionally replaced by Glu-Gly"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              160 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 629; DB 22; Pred. No. 3.4e-60; Mismatches 0;
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                                                                                                                                                                                                                                                     toxoid P30
                                                                                                                                                                                                                                                                                                                                                                                                                                      AutoVac
                                                                                                                                                                                                                                                                                                                                                                                                  GDF-8; myostatin; vaccine; muscle; n
                                                                                                                                                       substituted by formation"
                                                                                                                                                                                                                                                                                                                                                                                                                                      construct
                                                                                                                                                                                                                                                    epitope"
                                                                                                                                                                                                                                                                                                                                                                                                   meat;
                                                                                                                                                                                                                                                                                                                                                                                                                                      GDF-8 ext
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 130;
                                                                                                                                                                                                                                                                                                                                                                                                   tetanus toxin;
meat; cachexia;
                                                                                                                                                                                                                                                                                         of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               109
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Matches

109;

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Simila

100.0%; Score 629; DB 22; arity 100.0%; Pred. No. 4.2e-60; onservative 0; Mismatches 0;

Length 160;

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Gaps

0

Query Match Best Local

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cc which consists of the C-terminal 160 amino acids of human growth cc differentiation factor 8 (GDF-8, see AAF20131) with residues 16-36 cc substituted by the promiscuous tetanus toxin T-cell epitope P30 (see CC AAB20144) and residues 37-51 substituted by tetanus toxin T-cell epitope P2 (see AAB20143). It is an object of the invention to comprise comparison of GDF-8 in order to increase the muscle growth crate of farm animals. The vaccines (see AAB20145-53) are capable of breaking autotolerance against autologous GDF-8. They comprise cc the C-terminal portion of human GDF-8 in which a portion of the che protein. Nucleic acids encoding the GDF-8 variants can be used cfor genetic immunisation of the animals. Down-regulation of GDF-8 activity can increase muscle mass by up to at least 45% in cattle, pigs and poultry used for meat production, reducing the need for antibiotic feed-additives. Anti-GDF8 vaccines can be used to treat human disease such as cancer cachexia where muscle atrophy is gronounced and for patients suffering from acute and chronic heart cfailure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Increasing the muscle mass of animals used in meat production by regulating growth differentiation factor 8 (GDF-8) activity in the animal through induction of anti-GDF-8 antibody production -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-112680/12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example 1; Page 107-108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Halkier
 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ŧ,
   160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mouritsen S,
   AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  110pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Klysner S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in the
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AAB73188
ID AAB7
XX AAB7
XX AAB7
XX AAB7
XX AAB7
XX Chic
XX Gene
KW Gene
KW musc
KW musc
KW musc
KW woo
XX WO2(
XX WO2(
XX AAB73188
XX WO2(
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XX AAB73188
XX WO2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexi neurodegenerative disease; amyotrophic lateral sclerosis; obesity; muscular dystrophy; musculodegenerative disease; tissue repair; muscle wasting disease; neuromuscular disorder; spinal cord injury; traumatic injury; congestive obstructive pulmonary disease.
           19-AUG-1999;
                                                                                               17-AUG-2000;
                                                                                                                                                                                              22-FEB-2001.
                                                                                                                                                                                                                                                                                                                                                                           Gallus gallus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chicken GDF-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB73188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB73188 standard; Protein; 226 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109
                                                                                                       2000WO-US22884
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cachexia;
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RESULT 10
AAB20152
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Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            which was isolated in the present invention. GDF-8 is a GDF-8 protein, neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and muscular dystrophy), musculodegenerative diseases or in tissue repair due to trauma, obesity and disorders related to abnormal proliferation of adipocytes. GDF-8 is also useful for treating malignancies of the various organ systems, particularly cells in muscle or adipose tissues and in gene therapy for the treatment of cell proliferative or immunological diseases mediated by GDF-8. In addition, GDF-8 is also useful for treating muscle wasting disease, neuromuscular disorder, spinal cord injury, traumatic injury, congestive obstructive pulmonary disease. (COPD), AIDS or cachexia.
                                                                                                                                                            Chimeric
Chimeric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New substantially purified growth differentiation factor-8 polypeptide useful for treating muscle wasting disease, obesity, muscular dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
                                                                                                                                                                                                                                                                         30-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                     Region
                                                                                                                                                                                                 Growth differentiation factor 8; T-cell epitope; down-regulation; cardiant; human; mutant; mutein.
                                                                                                                                                                                                                                                 Growth differentiation factor 8 AutoVac construct GDF-8 dimer
                                                                                                                                                                                                                                                                                                                        AAB20152 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           dystrophy, nand cachexia
             Misc-difference
                                                             Region
                                                                                      Region
                                                                                                              Region
                                                                                                                                                  Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 9; Fig 2; 124pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OCYU)
                                                                                                                                                                                                                                                                                                                                                                                      178
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                                                                                                                                                                                                                                                                                                                                                                                    VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                                                                                                                                                                                                                   2001-211209/21
B; AAF63554.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          McPherron AC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   UNIV JOHNS HOPKINS
                                                                                                                                                            Homo sapiens.
Clostridium t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  226 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 629; DB 22; larity 100.0%; Pred. No. 6.2e-60; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                         (first
                                                                                     /note= ":
110..124
                                                             /note=
125..1
                                     /note=
146..2
                                                                                                               1..109
                                                                                                                        Location/Qualifiers
                         note=
                                                             ..145
                                                                                                                                                                                                                                                                         entry)
                                     254
"optionally replaced by Glu-Gly"
                                                                                                                                                              tetani.
                         "109 C-terminal residues of human
                                                                                                 "109 C-terminal
                                                "tetanus toxoid P30 epitope"
                                                                       "tetanus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SCHOOL MEDICINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                         254 AA
                                                                        toxoid
                                                                                                                                                                                                            vaccine;
                                                                                                                                                                                                                      GDF-8; myostatin;
                                                                        P2
                                                                                                residues of
                                                                        epitope"
                                                                                                                                                                                                            muscle; meat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                      tetanus
                                                                                                 human
                                                                                                                                                                                                            cachexia;
                                                                                                  GDF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           226;
                                                                                                                                                                                                                         toxin;
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RESULT 11
AAB20132
ID AAB20
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AC AAB20
XX
AC AAB20
XX
DT 30-AF
XX
DT Turke
XX
CFOWT
KW Growt
KW Growt
KW vacci
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present sequence is that of AutoVac construct GDF-8 dimer comprising 2 copies of the 109-amino acid C-terminal region of human growth differentiation factor 8 (GDF-8, see AAF20141) covalently connected through the P2 and P30 T-cell epitopes (see AAB20143-44) of tetanus toxin. It is an object of the invention to produce a recombinant therapeutic vaccine that is capable of effecting down-regulation of GDF-8 in order to increase the muscle growth rate of farm animals. The vaccines (see AAB20145-53) are capable of breaking autotolerance against autologous GDF-8. They comprise the C-terminal portion of human GDF-8 in which a portion of the native sequence is replaced by a T-cell epitope such as P30, with minimal disturbance of the authentic 3-dimensional structure of the protein. Nucleic acids encoding the GDF-8 variants can be used for genetic immunisation of the animals. Down-regulation of GDF-8 activity can increase muscle mass by up to at least 45% in cattle, pigs and poultry used for meat production, reducing the need for antibiotic feed-additives. Anti-GDF8 vaccines can be used to treat human diseases such as cancer cachexia where muscle atrophy is pronounced and for patients suffering from acute and chronic heart
                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present s
                                                                                                                                 AAB20132;
                                                                                                                                                                  AAB20132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pronounced and for failure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Increasing the muscle mass of animals used in meat production by down regulating growth differentiation factor 8 (GDF-8) activity in the animal through induction of anti-GDF-8 antibody production -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25-JAN-2001.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Misc-difference
                vaccine;
                                  Growth
                                                                Turkey growt
                                                                                                30-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 1; Page 105-106; 110pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-JUL-1999;
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                                                                                                                                                                                                                                                206
                                                                                                                                                                                                                                                                                                              146
                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                             VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS 109
                                                                                                                                                                                                                                                                                                                DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
                                                                                                                                                                                                                                                                                                                                                                            109;
                                  diffe:
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%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7
                   Bum
                                                                                                                                                                  standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                              254 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mouritsen S,
              rentiation factor 8; GDF-8; myostatin; cle; meat; cachexia; cardiant; turkey.
                                                                h differentiation factor 8.
                                                                                                                                                                                                                                                                                                                                                                             100.0%; Score 629; DB 2 larity 100.0%; Pred. No. 7e-60; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2680/12.
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                                                                                               (first entry)
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99US-0145275.
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/note= "c
                                                                                                                                                                  Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "optionally replaced by Glu-Gly"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Klysner S;
                                                                                                                                                                                                                                                                                                                                                                                                            DB 22;
                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                            Length 254;
                                  down-regulation;
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                                                                                                                                                                                                                                                                                                     RESULT 12
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Best Local S
Matches 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present sequence is that of turkey growth differentiation factor (2 8 (GDF-8), also called myostatin. It is an object of the invention (5 to produce a recombinant therapeutic vaccine capable of effecting (6 down-regulation of GDF-8 in order to increase the muscle growth (7 crate of farm animals. Variants of GDF-8 (see AAB20145-53) are (7 crate of farm animals. Variants of GDF-8 (see AAB20145-53) are (7 crate of farm animals. Variants of GDF-8 (see AAB20145-53) are (7 crate of farm animals. These comprise a C-terminal portion of human (7 crate of properties and portion of the native sequence is replaced by a cracell epitope such as the promiscuous tetanus toxin T-cell epitope (7 cracell epitope such as the promiscuous tetanus toxin T-cell epitope (7 cracell epitope promise to immunisation of the animals. Down-regulation of GDF-8 (7 cracell epitope possible) and poultry used for meast production, reducing the cracell epitope (7 cracell epitope possible) and poultry used for meat production, reducing the cracell epitope to treat human diseases such as cancer cachexia where muscle atrophy contents for patients suffering from acute and chronic is beautiful for patients suffering from acute and chronic contents for patients suffering from acute and chronic contents for patients suffering from acute and chronic contents suffering from acute and chronic contents acute acute and chronic contents acute and chronic contents acute and chronic contents acute ac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Increasing the muscle mass of animals used regulating growth differentiation factor 8 animal through induction of anti-GDF-8 ant:
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26-JUL-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Melepgris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example
                                     neuroprotective; antidia
myostatin receptor; GDF;
wasting disorder; anorex
metabolic disorder; obes
                                                                                                                                                                                                                                                                                     623
                                                                                                                                                                                                                                                                 AAU75623
                                                                                                                                                    Chicken promyostatin.
                                                                                                                                                                                          21-MAY-2002
                                                                                                                                                                                                                              AAU75623;
                                                                                                                                                                                                                                                                                                                                                                                                                                         254
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  failure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
1 Similarity 100.0%;
109; Conservative
 gallus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>ب</u>
                                                                                                                                                                                                                                                                 standard;
                                                                                                              promyostatin;
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                                                                                                                                                                                          (first
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA;
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99US-0145275
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                      antidiabetic; growth differentiation factor receptor; or; GDF; muscle tissue; adipose tissue; cachexia; anorexia; muscular dystrophy; neuromuscular disease: er; obesity; type II diabetes.
                                                                                                                                                                                                                                                                  Protein;
                                                                                                                                                                                        entry)
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                                                                                                                                                                                                                                                                  374
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 629; DB 2
Pred. No. 1e-59;
Mismatches
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RESULT 13
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KW Growth di
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N-PSDB;
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                                                                                                                                cell proliferation; factor-beta.
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267..375
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GDF-8 expression is disrupted or interfered with. Also claimed care: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb from these animals; (2) method for increasing muscle mass in canimals by administering an antibody (Ab) that binds to GDF-8; (3) inhibiting the action of GDF-8 by treating foetal or adult muscle or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic acid encoding a GDF-8 protein truncated by loss of the C-terminal active fragment. The transgenic animals have increased muscle mass and for poultry reduced cholesterol contents. Method (3) is used to treat muscle wasting or neuromuscular diseases, muscular atrophy and aging, particularly muscular dystrophy, spinal cord or traumatic injuries, congestive or obstructive lung disease, AIDS and cachexia. Method (4) is used to treat cancer of muscle, connective tissue and bone, or obesity. Also (not claimed) GDF-8 can be used to maintain myoblasts intended for transplanting or to improve efficiency of fusion. Ab can be used to detect and quantify GDF-8 (particularly in muscle, for diagnosis or monitoring), also for immunotherapy and in vivo imaging.
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animals by a
inhibiting the
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ession
                                                                                                                                                                                                                                                                                                                                                                                                                         se tissue. The sequence was deduced from a cDNA clone 819) isolated from a skeletal muscle cDNA library. The provides novel mammalian and avian GDF-8 proteins (see 2). A transgenic non-human animal is claimed in which
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GDF-8), a novel member of the transforming growth family that appears to relate to various cell ive disorders, especially those involving muscle, e tissue. The sequence was deduced from a cDNA c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       f GDF-8 inhibitors for treating cancer,
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to various cell
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                                                                                                                                                                   differentiation
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06-AUG-199

05-FFB-1998;

98WO-US02479.

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This is the amino acid sequence of porcine growth differentiation factor-8 (GDF-8), a novel member of the transforming growth factor-8 (beta superfamily that appears to relate to various cell proliferative disorders, especially those involving muscle, nerve and adipose tissue. The sequence was deduced from a cDNA clone (see AAV45822) isolated from a skeletal muscle cDNA library. The invention provides novel mammalian and avian GDF-8 proteins (see AAW69883-92). A transgenic non-human animal is claimed in which GDF-8 expression is disrupted or interfered with. Also claimed are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb from these animals; (2) method for increasing muscle mass in animals by administering an antibody (Ab) that binds to GDF-8; (3) inhibiting the action of GDF-8 by treating foetal or adult muscle or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic acid encoding a GDF-9 protein truncated by loss of the C-terminal active fragment. The transgenic animals have increased muscle mass and for poultry reduced cholesterol contents. Method (3) is used to treat muscle wasting or neuromuscular diseases, muscular atrophy and cachexia. Method (4) is used to treat cancer of muscle, connective tissue and bone, or obstructive lung disease, AIDS and cachexia. Method (4) is used to treat cancer of muscle, can be used to maintain myoblastis intended for transplanting or to improve efficiency of fusion. Ab can be used to detect and quantify GDF-8 (particularly in muscle, for diagnosis or monitoring), also industry and in vivo imaging.
     Query Match
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Matches 109
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05-FEB-1997;
28-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Transgenic animals with gene for growth differentiation factor-8 disrupted - have increased muscle and reduced cholesterol contents, also use of GDF-8 inhibitors for treating cancer, obesity, neuromuscular disease
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4: /cgn2_6/ptodata/1/pubpaa/US06 PUBCOMB.pep:*

5: /cgn2_6/ptodata/1/pubpaa/US07 PUBCOMB.pep:*

6: /cgn2_6/ptodata/1/pubpaa/US07 PUBCOMB.pep:*

7: /cgn2_6/ptodata/1/pubpaa/US08 PUBCOMB.pep:*

9: /cgn2_6/ptodata/1/pubpaa/US09 PUBCOMB.pep:*

10: /cgn2_6/ptodata/1/pubpaa/US09 PUBCOMB.pep:*

11: /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep:*

12: /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep:*

13: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep:*

14: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep:*
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US-09-841-730-2
US-09-841-730-14
US-09-841-730-18
US-09-859-211-14
US-09-859-211-23
US-09-859-211-27
US-09-859-211-29
US-09-841-730-4
US-09-841-730-6
US-09-841-730-6
US-09-859-211-12
US-09-859-211-25
US-09-859-211-25
US-09-859-211-25
US-09-859-894A-11
US-09-859-894A-11
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e 33, Appl
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ALIGNMENTS	-10-115-406-	09-813-398-2	09-813-398-2	09-880-708-2	09-859-211-4	-10-115-406-2	-09-813-459-	-09-205-658-3	09-841-730-27	09-841-730-2	09-841-730-2	US-09-813-398-33	-09-859-894A	-09-454-540-6	-09-454-540-	09-841-730-2	-09-859-894A	-09-454-540-	09-859-211-8	09-859-211-2	39-841-730-1	09-859-211-3	09-841-730-1	-09-754-826-)9-859-211-1)9-841-730-1
	Sequence 9, Appli	equence 22, Appr	equence 20, Ap	e 24, Ap	equence 46, F	Sequence 20, Ap	equence 20,	e 317, A	equence 27, App	equence 29, Ap	equence 20, Ap	e 33, Ap	Sequence 2, Appl	e 6, Ap	e 2, Appl	25, App1	Sequence 4, App	Sequence 4, Appl	` >	equence 21,	equence 12,	equence 31,	equence 16,	Sequence 2,	equence 19, Appl	e 10,

FACTOR-8

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RESULT 1
US-09-859-211-6
; Sequence 6, Application US/09859211
; patent No. US20020157125A1
; current Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
; TITLE OF INVENTION: GROWTH DIFFERENTIATION FAC
; FILE REFERENCE: 07265/144001
CURRENT APPLICATION NUMBER: US/09/859,211
; CURRENT FILING DATE: 1998-02-05
pRIOR APPLICATION NUMBER: 08/019,070
pRIOR APPLICATION NUMBER: 08/862,445
pRIOR APPLICATION NUMBER: 08/847,910
pRIOR APPLICATION NUMBER: 08/847,910
pRIOR APPLICATION NUMBER: 08/95,071
pRIOR APPLICATION NUMBER: 08/795,071
pRIOR APPLICATION NUMBER: 08/525,596
pRIOR APPLICATION NUMBER: 08/525,596
pRIOR APPLICATION NUMBER: PCT/US94/03019
pRIOR APPLICATION NUMBER: 98/033,923
pRIOR FILING DATE: 1994-03-18
pRIOR APPLICATION NUMBER: 08/033,923
pRIOR FILING DATE: 1993-03-19
software: FastSEQ for Windows Version 4.0
                                                                                                                                                                                               ; NUMBER OF SEQ
; SOFTWARE: Fast
; SEQ ID NO 6
; LENGTH: 126
; TYPE: PRT
; ORGANISM: Mus
US-09-859-211-6
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Conservative 0;
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Pred. No. 1.9e-59;
Mismatches 0;
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RESULT 2
US-09-859-211-33
"Approximately continuence 33, Approximately continuence 34, Approxima
Lee, Se-Jin

ITTLE OF INVENTION: GROWTH DIFFERENTIATION FACE
FILE REFERENCE: 07265/144001
CURRENT APPLICATION NUMBER: US/09/859,211
CURRENT FILING DATE: 2001-05-15
PRIOR APPLICATION NUMBER: 09/019,070
PRIOR APPLICATION NUMBER: 08/862,445
PRIOR FILING DATE: 1998-02-05
PRIOR FILING DATE: 1997-05-23
PRIOR FILING DATE: 1997-04-28
PRIOR APPLICATION NUMBER: 08/847,910
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR FILING DATE: 1997-02-05
PRIOR FILING DATE: 1995-10-26
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US-09-859-211-35
; Sequence 35, Application US/09859211
; Sequence 35, Application US/09859211
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TITLE OF INVENTION: GROWTH DIFFERENTIATION
FILE REFERENCE: 07265/144001
CURRENT APPLICATION NUMBER: US/09/859,211
CURRENT FILING DATE: 2001-05-15
PRIOR APPLICATION NUMBER: 09/019,070
PRIOR FILING DATE: 1998-02-05
PRIOR APPLICATION NUMBER: 08/862,445
PRIOR APPLICATION NUMBER: 08/847,910
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: PCT/US94/03019
PRIOR FILING DATE: 1994-03-18
PRIOR APPLICATION NUMBER: 08/033,923
PRIOR FILING DATE: 1993-03-19
NUMBER OF SEC. 1-
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APPLICANT: Lee, Se-J.
APPLICANT: McD.
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Pred. No. 2e-59;
Mismatches
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Sequence 2, App.
Sequence 2, App.
Patent No. US20020157120011;
Patent No. US20020157120011;
GENERAL INFORMATION:
APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
THEREOF, AND METH
                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
FITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
FITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
FILE REFERENCE: JHU1470-2
CURRENT APPLICATION NUMBER: US/09/841,730
CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/626,896
PRIOR FILING DATE: 2000-07-27
PRIOR APPLICATION NUMBER: 09/485,046
PRIOR FILING DATE: 2000-01-31
PRIOR FILING DATE: 1900-01-31
PRIOR APPLICATION NUMBER: PCT/US98/15598
PRIOR FILING DATE: 1998-07-28
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR FILING DATE: 1997-08-01
NUMBER OF SEQ ID NOS: 29
SOFTWARE: FastSEQ for Windows Version 4.0
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US-09-841-730-2
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US-09-841-730-
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Best Local S
Matches 109
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SEQ ID NO 8
LENGTH: 37
TYPE: PRT
ORGANISM:
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Best Local S
Matches 109
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20020157126A1
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Pred. No. 5.9e-59;
Mismatches 0;
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Pred. No. 3.5e-59;
Mismatches 0;
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APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
FILE REFERENCE: JHU1470-2
CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/626,896
PRIOR FILING DATE: 2000-07-27
PRIOR FILING DATE: 2000-07-27
PRIOR APPLICATION NUMBER: 09/485,046
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: 09/485,046
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR PILING DATE: 1998-07-28
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR FILING DATE: 1997-08-01
NUMBER OF SEQ ID NOS: 29
SOFTWARE: FastSEQ for Windows Version 4.0
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US-09-841-730-14
; Sequence 14, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
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CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/626,896
PRIOR FILING DATE: 2000-07-27
PRIOR APPLICATION NUMBER: 09/485,046
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: PCT/US98/15598
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR FILING DATE: 1997-08-01
NUMBER OF SEQ ID NOS: 29
SOFTWARE: FastSEQ for Windows Version 4.0
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SOFTWARE: Fast
SEQ ID NO 2
SEQTH: 375
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SEQ ID NO 14
LENGTH: 375
TYPE: PRT
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RESULT 7
US-09-841-730-18
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US-09-859-211-14
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US-09-841-730-18
                                                                        PRIOR APPLICATION NUMBER: 09/019,070

PRIOR FILING DATE: 1998-02-05

PRIOR APPLICATION NUMBER: 08/862,445

PRIOR FILING DATE: 1997-05-23

PRIOR APPLICATION NUMBER: 08/847,910

PRIOR APPLICATION NUMBER: 08/795,071

PRIOR APPLICATION NUMBER: 08/795,071

PRIOR APPLICATION NUMBER: 08/525,596

PRIOR FILING DATE: 1997-02-05

PRIOR APPLICATION NUMBER: PCT/US94/03019

PRIOR APPLICATION NUMBER: PCT/US94/03019

PRIOR APPLICATION NUMBER: 08/033,923

PRIOR APPLICATION NUMBER: 08/033,923

PRIOR FILING DATE: 1993-03-19

NUMBER OF SEQ ID NOS: 51

SOFTWARE: FastSEQ for Windows Version 4.0
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CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/626,896
PRIOR FILING DATE: 2000-07-27
PRIOR APPLICATION NUMBER: 09/485,046
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: PCT/US98/15598
PRIOR FILING DATE: 1998-07-28
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR FILING DATE: 1997-08-01
NUMBER OF SEQ ID NOS: 29
SOFTWARE: FastSEQ for Windows Version 4.0
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Sequence 18, Applicant No. US20020157126A1

Patent No. US20020157126A1

Sequence 18, Applicant No. US20020157126A1

GENERAL INFORMATION: Se-Jin Applicant: Lee, Se-Jin Alexandra C.

APPLICANT: McPherron, Alexandra C.

APPLICANT: McPherron, Alexandra C.

TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,

TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME

TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 14 Patent No.
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TITLE OF INVENTION: GROWTH D
FILE REFERENCE: 07265/144001
CURRENT APPLICATION NUMBER:
CURRENT FILING DATE: 2001-0
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LENGTH: 37
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CION NUMBER:
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WIH DIFFERENTIATION
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Pred. No. 5.9e-59;
Mismatches 0;
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; Patent No. US20020157125A1
; GENERAL INFORMATION:
; APPLICANT: Lee, Se-Jin
; APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FA
; FILE REFERENCE: 07265/144001
; CURREN' APPLICATION NUMBER: US/09/859,211
; CURRENT FILING DATE: 2001-05-15
; PRIOR APPLICATION NUMBER: 09/019,070
; PRIOR FILING DATE: 1998-02-05
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US-09-859-211-27
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CURRENT FILING DATE: 2001-05-15
PRIOR APPLICATION NUMBER: 09/019,070
PRIOR FILING DATE: 1998-02-05
PRIOR APPLICATION NUMBER: 08/862,445
PRIOR APPLICATION NUMBER: 08/847,910
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR APPLICATION NUMBER: 08/795,071
PRIOR FILING DATE: 1997-02-05
PRIOR FILING DATE: 1997-02-05
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: 08/525,596
PRIOR APPLICATION NUMBER: PCT/US94/03019
PRIOR APPLICATION NUMBER: 9CT/US94/03019
PRIOR APPLICATION NUMBER: 08/033,923
PRIOR FILING DATE: 1994-03-19
PRIOR FILING DATE: 1993-03-19
NUMBER OF SEQ ID NOS: 51
SOFTWARE: FastSEQ for Windows Version 4.
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SEQ ID NO 23
LENGTH: 375
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APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alex
TITLE OF INVENTION: GROWTH
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Similarity 100.0%;
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larity 100.0%; Pred. No. 5.9e-59;
Conservative 0; Mismatches 0;
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mmeer: PCT/US94/03019
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                                                                                                                          ; ORGANISM: Porcine US-09-859-211-29
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US-09-859-211-29
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                                                             Matches
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PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: McPherron, Alexandra C. TITLE OF INVENTION: GROWTH DIFFEREN FILE REFERENCE: 07265/144001 CURRENT APPLICATION NUMBER: US/09/8 CURRENT FILING DATE: 2001-05-15
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ENGTH: 375
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OR APPLICATION NUMBER: 09/019,070
OR FILING DATE: 1998-02-05
OR APPLICATION NUMBER: 08/862,445
OR APPLICATION NUMBER: 08/847,910
OR FILING DATE: 1997-05-23
OR APPLICATION NUMBER: 08/795,071
OR FILING DATE: 1997-02-05
OR APPLICATION NUMBER: 08/525,596
OR APPLICATION NUMBER: 08/525,596
OR APPLICATION NUMBER: PCT/US94/03019
OR FILING DATE: 1994-03-18
OR APPLICATION NUMBER: 08/033,923
OR FILING DATE: 1993-03-19
BER OF SEQ ID NOS: 51
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OR FILING DATE: 1997-05-23
OR APPLICATION NUMBER: 08/847,910
OR FILING DATE: 1997-04-28
OR APPLICATION NUMBER: 08/795,071
OR FILING DATE: 1997-02-05
OR APPLICATION NUMBER: 08/525,596
OR FILING DATE: 1995-10-26
OR APPLICATION NUMBER: PCT/US94/03019
OR APPLICATION NUMBER: 08/033,923
OR APPLICATION NUMBER: 08/033,923
OR FILING DATE: 1993-03-19
BER OF SEQ ID NOS: 51
TWARE: FastSEQ for Windows Version 4.0
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INFORMATION:
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S20020157125A1
                                                         100.0%; Score 629; DB 9; larity 100.0%; Pred. No. 5.9e-59; Conservative 0; Mismatches 0;
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larity 100.0%;
Conservative 0
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2001-05-15
ER: 09/019,070
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; LOCATION:
US-09-454-540-5
RESULT 13
US-09-841-730-4
; Sequence 4, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
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Patent No. US20010053358A1

GENERAL INFORMATION:

APPLICANT: Se-Jin Lee and Alexandra McPherron

TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-11

NUMBER OF SEQUENCES: 9

CORRESPONDENCE ADDRESS:

ADDRESSEE: Fish & Richardson P.C.
                                                                                                                                                                                                                                           Best
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SOFTWARE: PatentIn Release #1.0, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/454,540
FILING DATE: 06-DEC-1999
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/795,671
FILING DATE: February 6, 1997
                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 375 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: HAILE, PH.D., LISA A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 0726
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 619/678-5099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 92037
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC-DOS/MS-DOS
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CLONE:
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CITY: La Jolla
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CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/626,896
PRIOR FILING DATE: 2000-07-27
PRIOR APPLICATION NUMBER: 09/485,046
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: PCT/US98/15598
PRIOR FILING DATE: 1998-07-28
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR FILING DATE: 1997-08-01
                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: 09/626,896
PRIOR FILING DATE: 2000-07-27
PRIOR APPLICATION NUMBER: 09/485,046
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: PCT/US98/15598
PRIOR FILING DATE: 1998-07-28
PRIOR APPLICATION NUMBER: 60/054,461
PRIOR FILING DATE: 1997-08-01
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Patent No.
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Matches
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APPLICANT:
TITLE OF IN
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NUMBER OF SEQ ID NO
SOFTWARE: FASTSEQ
                                                                                                                                                                                                                                                                                                                                                                                FILE REFERENCE: JHU1470-2
CURRENT APPLICATION NUMBER: US/09/841,730
CURRENT FILING DATE: 2001-04-24
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TYPE: PRT
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9-841-730-4
                                                                                                                                                     ORGANISM: Rat
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OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,

OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METHODS

REFERENCE: JHU1470-2
                                                                                                                                                                                                                                                                                                                                                                                                                        CANT: McPherron, Alexandra C.
OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METHODS
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3. US20020157126A1
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                                                                                        100.0%; Score 629; DB 9; llarity 100.0%; Pred. No. 5.9e-59; Conservative 0; Mismatches 0;
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larity 100.0%; Pred. No. 5.9e-59;
Conservative 0; Mismatches 0;
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ER: 09/626,896
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US-09-859-211-12

Sequence 12, Application US/09859211

Patent No. US20020157125A1

GENERAL INFORMATION:

APPLICANT: McPherron, Alexandra C.

TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8

FILE REFERENCE: 07265/144001

CURRENT APPLICATION NUMBER: US/09/859,211

CURRENT FILING DATE: 1998-02-05

PRIOR FILING DATE: 1998-02-05

PRIOR APPLICATION NUMBER: 08/862,445

PRIOR FILING DATE: 1997-03-23

PRIOR APPLICATION NUMBER: 08/847,910

PRIOR APPLICATION NUMBER: 08/847,910

PRIOR APPLICATION NUMBER: 08/795,071

PRIOR APPLICATION NUMBER: 08/795,071

PRIOR APPLICATION NUMBER: 08/525,596

PRIOR FILING DATE: 1995-10-26

PRIOR APPLICATION NUMBER: 08/525,596

PRIOR APPLICATION NUMBER: 08/03,923

PRIOR FILING DATE: 1994-03-18

PRIOR APPLICATION NUMBER: 08/03,923

PRIOR FILING DATE: 1994-03-18

PRIOR FILING DATE: 1994-03-18

PRIOR APPLICATION NUMBER: 08/03,923

PRIOR FILING DATE: 1993-03-19

SOFTWARE: FastSEQ for Windows Version 4.0
Search completed: January 31, 2003, 18:27:18 Job time : 9 secs
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US-09-859-211-12
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'cgn2_6/ptodata/1/iaa/5A_COMB.pep:*

'cgn2_6/ptodata/1/iaa/5B_COMB.pep:*

'cgn2_6/ptodata/1/iaa/6A_COMB.pep:*

'cgn2_6/ptodata/1/iaa/6B_COMB.pep:*

'cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*

'cgn2_6/ptodata/1/iaa/backfiles1.pep:*
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US-08-525-596B-6
US-09-177-860A-6
US-09-378-238-6
US-09-378-238-19
US-09-378-238-19
US-09-378-238-19
US-08-765-875-5
US-08-765-875-5
US-09-177-860A-14
US-09-252-149B-29
US-09-252-149B-32
US-09-378-238-14
US-09-451-501-19
US-09-451-501-21
US-09-451-501-21
US-09-451-501-21
US-09-451-501-27
US-09-252-149B-27
US-09-252-149B-27
US-09-252-149B-29
US-09-378-238-12
US-09-378-238-12
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Result

NO.

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TYPE: amino a
TOPOLOGY: lin
MOLECULE TYPE:
FRAGMENT TYPE:
US-08-525-596B-6
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Patent No. 5827733
GENERAL INFORMATION:
APPLICANT: Huynh, Thanh
                                                                                                                                                       TELEFAX: 6
INFORMATION FOR
SEQUENCE CHAR
LENGTH: 12
                                                                                                                                                                                                                                                                                   CLASSIFICATION: 514

PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US
FILING DATE: 08-JUL-1994
ATTORNEY/AGENT INFORMATION:
NAME: Wetherell, Jr
REGIOTOTOTAL
                                                                                                                                                                                         NAME: Wetherell, Jr., Ph.D, J.
REGISTRATION NUMBER: 31,678
REFERENCE/DOCKET NUMBER: 0726
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-678-5070
TELEFAX: 619-678-5099
INFORMATION FOR SEQ ID NO: 6:
                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET: 4225 Execu
CITY: La Jolla
STATE: CA
COUNTRY: US
ZIP: 92037
COMPUTER READABLE FOR
MEDIUM TYPE: Diske
COMPUTER: IBM Comp
OPERATING SYSTEM:
SOFTWARE: FastSEQ
CURRENT APPLICATION D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Su
CITY: La Jolla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Lee, Se-Jin
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
NUMBER OF SEQUENCES: 32
                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION
FILING DATE
CLASSIFICAT
                                                                                                                                                          26 amino
100.0%; Score 629; DB 2; larity 100.0%; Pred. No. 3.7e-66; Conservative 0; Mismatches 0;
                                                                                                                                                      RACTERISTICS:
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internal
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M: Windows95
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US-09-177-860A-6
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US-09-378-238-6
; Sequence 6, Application US/09378238
; Patent No. 6465239
; GENERAL INFORMATION:
; APPLICANT: Lee, Se-Jin
; APPLICANT: McPherron, Alexandra C.
; TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC
; TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND NON-HUMAN
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                                                                                                                                                 RESULT
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REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 0726
TELECOMMUNICATION INFORMATION:
TELEPHONE: 858-677-1456
TELEFAX: 858-677-1465
INFORMATION FOR SEQ ID NO: 6:
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LANT: Lee, Se-Jin
LITLE OF INVENTION: ANTI
NUMBER OF SEQUENCES: 37
CORRESPONDENCE ADDPT
ADDRESSEE:
STREET:
CITY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 08/5.
FILING DATE: 19-SEP-1995
ATTORNEY/AGENT INFORMATION:
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PRIOR APPLICATION DATA:
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SOFTWARE: FastSEQ for
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Diskette
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>. 6096506
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YSTEM: Windows95
FastSEQ for Windows Version
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US-09-451-501-6
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SEQ ID NO 6
LENGTH: 12
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GENERAL INFORMATION:
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EARLIER
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CURRENT APPLICATION NUMBER: US/09/378,238
CURRENT FILING DATE: 1999-08-19
EARLIER APPLICATION NUMBER: 08/795,071
EARLIER FILING DATE: 1997-02-05
EARLIER APPLICATION NUMBER: 08/525,596
EARLIER APPLICATION NUMBER: 08/525,596
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                                                                INFORMATION
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       APPLICATION NUMBER: 08/795,071
FILING DATE: <Unknown>
APPLICATION NUMBER: PCT/US94/03019
FILING DATE: 18-March-1994
ATTORNEY/AGENT INFORMATION:
NAME: Lisa A. Haile, Ph.D.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/105001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 619/678-5099
FORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 126 amino acids
TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                    ZIP: 92037

COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette

COMPUTER: IBM Compatible

OPERATING SYSTEM: Windows95

SOFTWARE: FastSEQ for Windows Version

CURRENT APPLICATION DATA:

CURRENT APPLICATION MIMBER: US/09/451,501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Se-Jin Lee et al.,
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
NUMBER OF SEQUENCES: 27
                                                                                                                                                                                                                                                                       PRIOR
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APPLICATION NUMBER: 08/033,923
FILING DATE: 1993-03-19
DF SEQ ID NOS: 41
E: FastSEQ for Windows Version
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APPLICATION NUMBER: PCT/US94/03019
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              UNTRY:
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; LENGTH: 130
; TYPE: PRT
; ORGANISM: R
US-09-378-238-2
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TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC

TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND FILE REFERENCE: JHU1120-9

CURRENT APPLICATION NUMBER: US/09/378,238

CURRENT FILING DATE: 1999-08-19

EARLIER APPLICATION NUMBER: 08/795,071

EARLIER FILING DATE: 1997-02-05

EARLIER FILING DATE: 1995-10-25

EARLIER APPLICATION NUMBER: PCT/US94/03019

EARLIER FILING DATE: 1994-03-18

EARLIER APPLICATION NUMBER: 08/033,923

EARLIER FILING DATE: 1993-03-19

NUMBER OF SEQ ID NOS: 41
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                                                                                                                                                            US-09-378-238-19
                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Al
TITLE OF INVENTION: GROW
TITLE OF INVENTION: ACII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2
Patent No.
GENERAL INFORMATION:
APPLICANT: Lee, Se-Jin
APPLICANT: McPherron, Alexandra C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC
TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES
TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES
FILE REFERENCE: JHU1120-9
CURRENT APPLICATION NUMBER: US/09/378,238
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Best Local
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Best Local
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                                                                                                                                          Sequence
                                                                                                                              Patent No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DFGLDCDEHSTESRCCRYPLTVDFEAFGWDWIIAPKRYKANYCSGECEFVFLQKYPHTHL 60
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                                                                                                                                                                                                                             VHQANPRGSAGPCCTPTKMSPINMLYFNGKEQIIYGKIPAMVVDRCGCS
                                                                                                                                                                                                                                                                                                                                                             109;
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5. 6465239
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                                                                                                                              19, Application US/09378238
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Similarity 100.0%;
09; Conservative 0
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-21
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.larity 100.0%;
Conservative 0
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Pred. No. 3.8e-66;
Mismatches 0;
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Pred. No. 3.7e-66;
Mismatches 0;
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; LENGTH: 225
; TYPE: PRT
; ORGANISM: Gall
US-09-378-238-19
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LENGTH: 225
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NUMBER OF SEQ 1
SOFTWARE: FastS
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Best Local
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EARLIER
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                                                                                           INFORMATION FO
                                                                                                                                                                                                                                                                                                        COUNTRY: US
ZIP: 92037
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatil
OPERATING SYSTEM: Win
MOLECULE TYPE:
FRAGMENT TYPE:
08~525-596B-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
TITLE OF IN
                                                                                                                                                                                                                                                                  SOFTWARE: FastSEQ CURRENT APPLICATION NUMBER:
                                     SEQUENCE CHARACTERISTICS:
LENGTH: 375 amino acid
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                               APPLICATION NUMBER: PCT/US94/07762
FILING DATE: 08-JUL-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NERAL INFORMATION: APPLICANT: Huynh,
                                                                                                                                 TELECOMMUNIC
                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE
                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                     STREET: La J
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                                                                                                                                             REGISTRATION REFERENCE/I
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                                                                                                       TELEFAX:
                                                                                                                                                                                                                                        FILING DATE: 19
CLASSIFICATION:
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APPLICATION NUMBER: 08/795,071
FILING DATE: 1997-02-05
APPLICATION NUMBER: 08/525,596
FILING DATE: 1995-10-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: PCT/US94/0: FILING DATE: 1994-03-18
APPLICATION NUMBER: 08/033,923
FILING DATE: 1993-03-19
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OF SEQUENCES:
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                                                                                        etherell, Jr., Ph.D, CION NUMBER: 31,678
E/DOCKET NUMBER: 0726
ICATION INFORMATION:
E: 619-678-5070
619-678-5099
FOR SEQ ID NO: 14:
                                                                                                                                                                                                                                                                                                                                                                                                                    : Fish & Richardson P.C.
4225 Executive Square, Suite 1400
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SEQ for Windows
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VSTEM: Windows95
FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESS:
            protein
internal
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N: GROWTH DIFFERENTIATION FACTOR-8
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US-08-765-875-5
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TELEFAX: 619/455-5110
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 375 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 5, Application US/08765875
Patent No. 5914234
GENERAL INFORMATION:
APPLICANT: LEE, SE-JIN
                                                             Matches
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Best Local
                                                                                       Query Match
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MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Vo
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/765,875
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08, FILING DATE:
APPLICATION NUMBER: US/08, APPLICATION NUMBER: US/08, FILING DATE: 08-JUL-1994
ATTORNEY/AGENT INFORMATION:
NAME: TUMARKIN PH.D., LIS.
                                                                                                                                                                                        MOLECULE TYPE:
IMMEDIATE SOUR
                                                                                                                                                                                                                                                                                                                              NAME: TUMARKIN PH.D., LISA REGISTRATION NUMBER: P-38,3 REFERENCE/DOCKET NUMBER: PD TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: LEE, SE-JIN
APPLICANT: MCPHERRON, ALEXANDRA C.
TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-11
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSEE: SPENSLEY HORN JUBAS & LUBITZ
STREET: 1880 CENTURY PARK EAST, FIFTH FLOOR
CITY: LOS ANGELES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                FEATURE:
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NAME/KEY:
LOCATION:
765-875-5
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TOPOLOGY: li
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Conservative (
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llarity 100.0%;
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SR: PD3641
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                                                          Score 629; DB 2; Pred. No. 1.3e-65; Mismatches 0;
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Pred. No. 1.3e-65;
Mismatches 0;
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                                                                                        Length 375;
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US-08-795-671-5
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; Sequence 14, Applicatio
; Patent No. 6096506
; GENERAL INFORMATION:
APPLICANT: Huynh, T
APPLICANT: Lee, Se-
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 5, Application Patent No. 6008434 GENERAL INFORMATION:
                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                Best
                                                                                                                                                                                                                                                                          Query
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ATTORNEY/AGENT INFORMATION:
NAME: HAILE, PH.D., LISA A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 0726
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5079
INFORMATION FOR SEQ ID NO: 5:
                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION
SEQUENCE
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                                                                                                                                                                                                                                                                                                                                     IMMEDIATE
CLONE:
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: 1 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
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                                                                                                                                                 327
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                                                                                                                                                                                                                                                            Local
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                                                                         4, Application US/09177860A
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Similarity 100.0%;
)9; Conservative 0
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California
           f: Lee, Se-Jin
INVENTION: ANTIBODIES SPECIFIC FOR GROWTH DIFFERENTIATION FACTOR-8
    SEQUENCES: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                       CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Se-Jin Lee and Alexandra McPherron INVENTION: GROWTH DIFFERENTIATION FA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/08795671
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DENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                      linear
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S Executive Square, Suite
   ADDRESS
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Floppy disk
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Pred. No. 1.3e-65;
; Mismatches 0;
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RESULT 11

US-09-252-149B-29

Sequence 29, Application US/09252149B

Patent No. 6369201

GENERAL INFORMATION:

APPLICANT: Barker, Christopher A.

APPLICANT: Morsey, Mohamad

TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN

TITLE OF INVENTION: VERTEBRATE SUBJECTS

FILE REFERENCE: 9001-0042

CURRENT APPLICATION NUMBER: US/09/252,149B

CURRENT APPLICATION NUMBER: 60/075,213

PRIOR APPLICATION NUMBER: 60/075,213

PRIOR APPLICATION NUMBER: 60/075,213

PRIOR APPLICATION NUMBER: 60/075,213

PRIOR FILING DATE: 1998-02-19

NUMBER OF SEQ ID NOS: 39

SOPTWARE: Patentin Ver. 2.0

SEQ ID NO 29

LENGTH: 375
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; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; FRAGMENT TYPE: internal
US-09-177-860A-14
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APPLICATION NUMBER: US/09/177,860A
FILING DATE: 23-OCT-1998
CLASSIFICATION: 424
PRIOR APPLICATION ODATA:
APPLICATION NUMBER: 08/525,596
FILING DATE: 19-SEP-1995
ATTORNEY/AGENT INFORMATION:
NAME: Haile, Ph.D, Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/075003
TELEPHONE: 858-677-1456
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 375 amino acids
TYPE: amino acids
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Matches
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MEDIUM TYPE: Diskett
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OPERATING SYSTEM: Windows95
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Local Similarity
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CA
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 100.0%; Score 629; DB 4; larity 100.0%; Pred. No. 1.3e-65; Conservative 0; Mismatches 0;
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FILE REFERENCE: 9001-0042

CURRENT APPLICATION NUMBER: US/09/252,149B

CURRENT FILING DATE: 1999-02-18

PRIOR APPLICATION NUMBER: 60/075,213

PRIOR FILING DATE: 1998-02-19

NUMBER OF SEQ ID NOS: 39

SOFTWARE: Patentin Ver. 2.0

SEQ ID NO 34

LENGTH: 375

TYPE: PRT

ORGANISM: Gallus gallus
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US-09-252-149B-32
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US-09-252-149B-34
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; ORGANISM: Sus
US-09-252-149B-32
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GENERAL INFORMATION:
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Best Local
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APPLICANT: Morsey, Mohamad
TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN
TITLE OF INVENTION: VERTEBRATE SUBJECTS
FILE REFERENCE: 9001-0042
CURRENT APPLICATION NUMBER: US/09/252,1498
CURRENT FILING DATE: 1999-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: 60/075,213
PRIOR FILING DATE: 1998-02-19
NUMBER OF SEQ ID NOS: 39
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                APPLICANT: Barker, Christopher A.
APPLICANT: Morsey, Mohamad
TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
TITLE OF INVENTION: VERTEBRATE SUBJECTS
FILE REFERENCE: 9001-0042
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                                                        100.0%; Score 629; DB 4; arity 100.0%; Pred. No. 1.3e-65; onservative 0; Mismatches 0;
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                                                                                      Length 375;
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Sequence 14, Application.

Sequence 14, Application.

Patent No. 6465239

GENERAL INFORMATION:
APPLICANT: Lee, Se-Jin
APPLICANT: Lee, Se-Jin
TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND NON-HUMAN
TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES PILE REFERENCE: JHU1120-9

CURRENT FILING DATE: 1999-08-19

EARLIER APPLICATION NUMBER: US/09/378,238

CURRENT FILING DATE: 1997-02-05

EARLIER FILING DATE: 1997-02-05

EARLIER APPLICATION NUMBER: 08/795,071

EARLIER APPLICATION NUMBER: 08/795,071

EARLIER APPLICATION NUMBER: 08/525,596

EARLIER APPLICATION NUMBER: 08/525,596

EARLIER APPLICATION NUMBER: PCT/US94/03019

EARLIER APPLICATION NUMBER: 08/03,923

EARLIER FILING DATE: 1994-03-18

EARLIER FILING DATE: 1993-03-19

NUMBER: 07/0303,923

EARLIER FILING DATE: 1993-03-19

NUMBER: PSC ID NOS: 41

SOFTWARE: PSSCSC ID NOS: 41
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; Sequence 35, Apytta
; Sequence 35, Apytta
; Patent No. 6369201
; GENERAL INFORMATION:
; APPLICANT: Barker, Christopher A.
; APPLICANT: Morsey, Mohamad
; TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
; TITLE OF INVENTION: VERTEBRATE SUBJECTS
; FILE REFERENCE: 9001-0042
; CURRENT APPLICATION NUMBER: US/09/252,149B
; CURRENT FILING DATE: 1999-02-18
; PRIOR APPLICATION NUMBER: 60/075,213
; PRIOR APPLICATION NUMBER: 60/075,213
; PRIOR FILING DATE: 1998-02-19
; NUMBER OF SEQ ID NOS: 39
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 35
LENGTH: 375
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US-09-252-149B-35
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; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-378-238-14
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US-09-378-238-14
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109; Conservative 0
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Pred. No. 1.3e-65;
; Mismatches 0;
     Score 629; DB 4;
Pred. No. 1.3e-65;
Mismatches 0;
                                     Length 375;
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Search completed: January 31, 2003, 18:18:23
Job time: 12.5 secs